5. Alignment and Adjustment

5-1. Mechanism Alignment

- Refer to mechanical manual “DE-6 (AD68-30200A)”for the adjustment and checks of mechanism section.
- The location of test point (See Fig.1)

Test Point:
PB RF - Pin 11 of CN605
Head Switching Trigger - Pin 9 of CN605

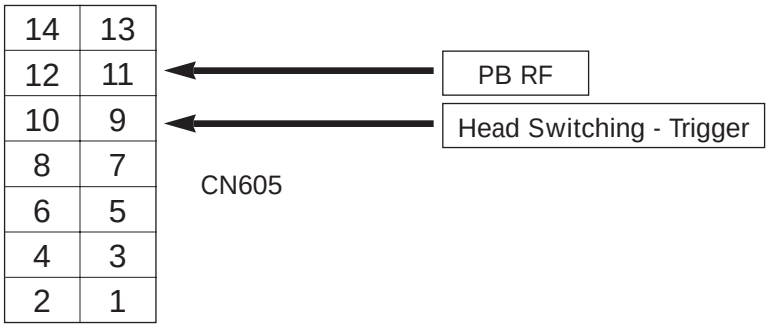


Fig. 1 Test point

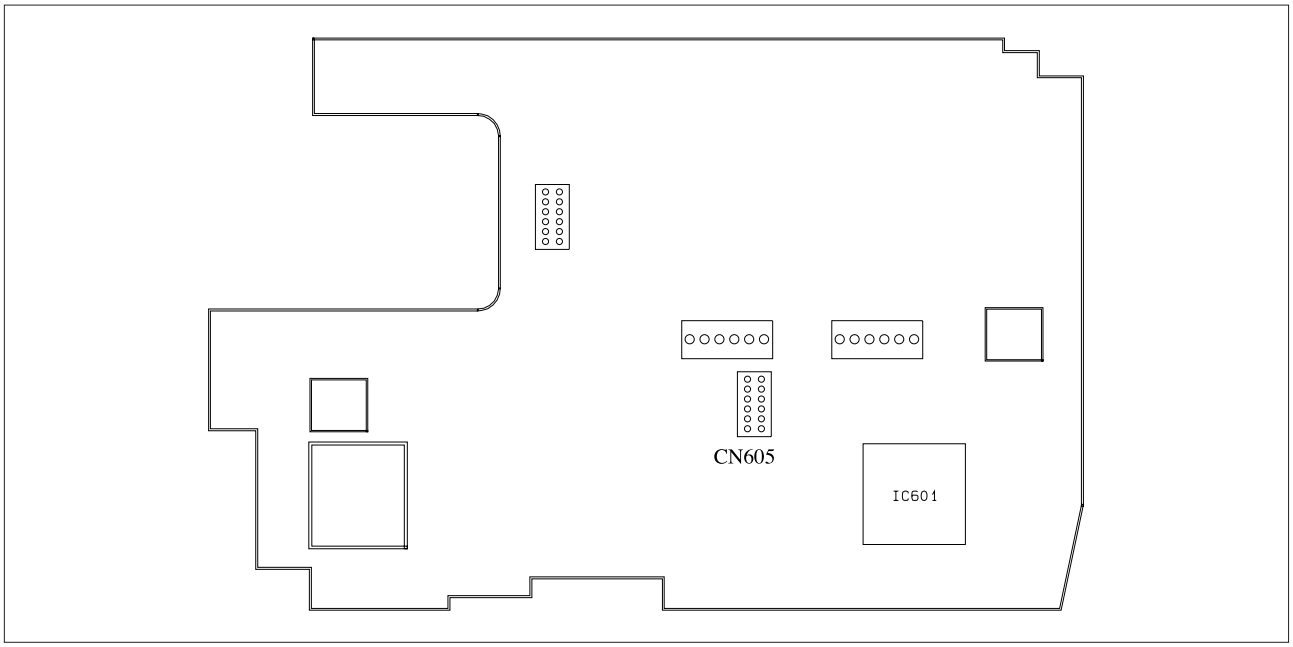
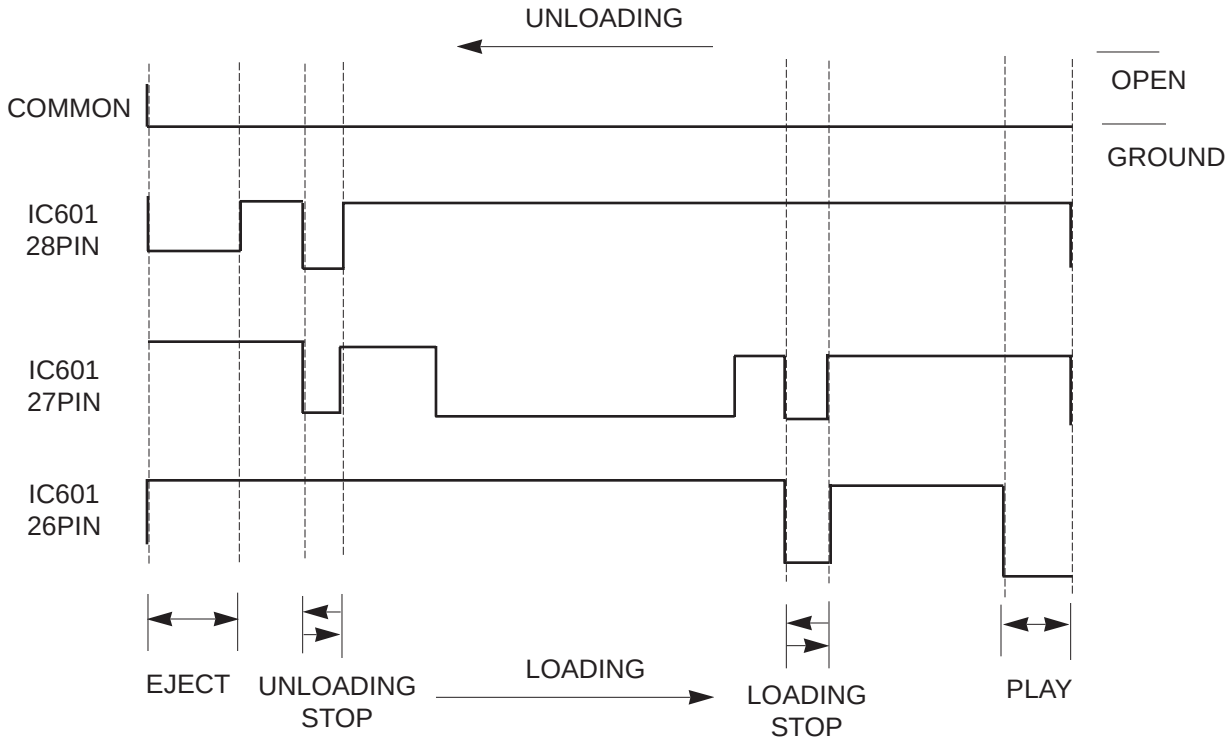


Fig. 2 Test location of test point



POSITION	IC601 28PIN	IC601 27PIN	IC601 26PIN	ACTION MODE
EJECT	L	H	H	EJECT
UNLOADING STOP	L	L	H	UNLOADING STOP
LOADING STOP	H	L	L	LOADING STOP
PB	H	H	L	PLAY, FF, Z/RTN, STILL....

5-2 Camera Section Adjustment

Note :

1. This system has

   1) EEPROM to store the confirmed adjustment data.
   2) DSP (Digital Signal Process ; ICP01 - Main board) chip to process the signal of camera parts.
   3) One test point for the frequency adjustment of DSP main clock (P. CLK).
   4) The special mode for camera adjustment using the function keys on the left case.

2. Keep in mind

   1) All adjustment steps should performed using the remote controller.

5-2-1 Preparations

1. Equipment to be used

1) DC Power supply
2) Oscilloscope
3) Frequency counter
4) Vectorscope
5) Waveform monitor
6) Color monitor or TV
7) Various charts
   - Color bar chart
   - Gray-scale chart, etc...

2. Composition of camera P.C.Boards

1) Main PCB 2) CCD PCB
3) CVF /EVF PCB

3. Adjustment preparations

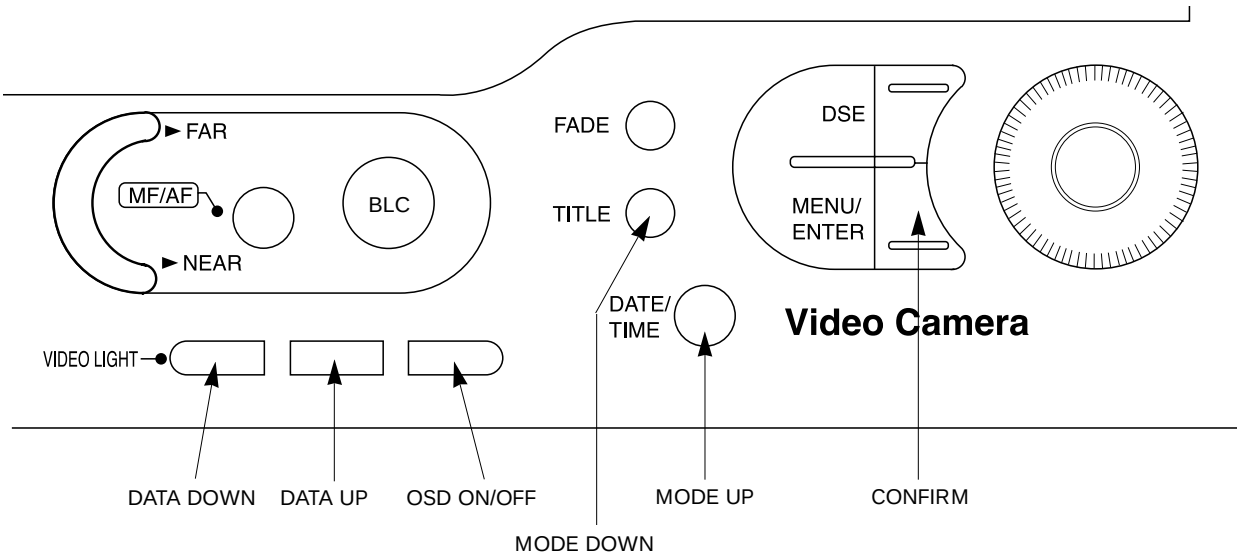
1) The function keys on the left case is used as a camera adjust tool.
2) Press the confirm button when each manual adjustment step is completed to write the adjustment data to the EEPROM.
3) After each adjustment step is completed, OSD shows “OK!”.
4) To cancel the adjustment mode, remove the power source.

4. The function keys on the left case

The following is a chart explaining the use of each button :

Using Button	Adjustment
MENU/ENTER (CONFIRM)	Data store after finishing adjustment by DATA UP/DOWN button.
Z/RTN (DATA DOWN) C/RESET (DATA UP)	When change data value of adjust state.
TITLE (MODE UP) DATE/TIME (MODE DOWN)	Mode change.
M/F Ring dial (FAR/NEAR)	Manual focus adjustment.
ZOOM TELE/ZOOM WIDE	Move the zoom position of lens.

The function keys left case is required to adjust the camera section.



⌘ ZOOM LEVER : ZOOM TELE/WIDE

Note : In service adjustment mode, button names are different from those in customer camera function control mode. EX) MENU/ENTER button is the same as confirm.

5. How to get into service "**ADJUST**" mode

STEP 1

1. Remove the lithium battery from the camcorder.
2. Connect the power source (battery/ DC cable).
3. Eject the tape if it is in the unit.
4. Set the power switch of the camcorder to "CAMERA" position.
5. Set OSD on state.

STEP 2

1. Press and hold the "EJECT" button and "STOP" button on the camcorder at the same time for more than 5 seconds. Then unit goes into service mode.

STEP 3

On screen display show "ODF. T.INI XX XX" CAMERA ADJUSTMENT mode has successfully been activated.

Note : When "XX XX" is shown in service adjustment procedures, this indicates variable values.

"CAMERA ADJUST MODE, EEPROM ADDRESS SEQUENCE & DATA OF PAGE 0"

ADDR	OSD-DISPLAY	CONTENT
0DF	T.INI	TABLE INITIAL
0CD	HALL	HALL AUTO ADJUST
0CE	IRIS	IRIS AUTO ADJUST
0CF	AWB	AWB AUTO ADJUST
0D0	LENS	LENS AUTO ADJUST(WARNING! DON'T USE WITHOUT AN INFINITE COLLIMATOR)
0D6	ZVR.C	ZOOM LEVER CENTER DATA CHECKING
0DB	AGCM	AGC AUTO ADJUST (NORMALLY NO USED)
0DE	3MLENS	3M LENS AUTO ADJUST AT SERVICE FIELD (DISTANCE: 3M +/- 1Cm)
	NO-OSD-DISPLAY	

ADDR	MODEL/DATA				CONTENT (EEPROM DATA PAGE 0)							
	PAL		NTSC									
	HI8	NORMAL	HI8	NORMAL	BIT SEGMENTATION EXPLAIN							
ADDR	DATA				D7	D6	D5	D4	D3	D2	D1	D0
001	50	50	50	50	OPTION	AGC TARGET-	0'=FIX	WDR='1'	PASTEL COLOR	KEY / RING	CAN / SECREM	EMBOSS COLOR
002	00	00	00	00	@IRIS CONTROL-LOW							
003	08	08	08	08	@IRIS CONTROL-HIGH							
004	F0	F0	F0	F0	* AWB-HSS MODE * AWB STOP HALL							
005	80	80	80	80	@P.CLK PWM-HIGH							
006	30	30	30	30	AGC TARGET DOWN VALUE AT 001H D6='1' OPTION							
007	00	00	00	00	AGC MAX, DARK SLICE-B CONTROL							
008	08	08	08	08	@UPD16835 INIT 4th							
009	66	66	66	66	@UPD16835 INIT 6th							
00A	66	66	66	66	@UPD16835 INIT 7th							
00B	00	00	00	00	@UPD16835 standard data current set A(4th.7) : D0, current set B(7th.7) : D1							
00C	03	03	03	03	@CDS F-REG(f1,f0) CAM : BIT0:f0,BIT1:f1							
00D	A0	A0	A0	A0	**changed by AUTO HALL ADJ(0CD)**	"@CDS F-REG(f9,f2) CAM ;PGA GAIN -HIGH(0.00dB~ 30.0dB)"						
00E	60	60	60	60	**changed by AUTO HALL ADJ(0CD)**	"@CDS G-REG CAM ;DAC1(HALL REFERENCE CONTROL;0V~3.0V);"						
00F	3A	3A	3A	3A	"@CDS H-REG CAM ;DAC2(HALL GAIN CONTROL;0V~3.0V); "							
010	87	87	87	87	"@CDS E-R(e1,e0),J-R(j0),M-R;D0:e0,D1:e1,D2:j0(CAM),D4:e0,D5:e1,D6:j0(VCR),D7:cds-rev='1'"							
011	77	77	7B	80	"@CDS F-REG(f9,f2) VCR ;PGA GAIN -HIGH(0.00dB~ 10.0dB)"							
012	00	00	00	00	@WDR REGISTER[7,0] *AEINSEL=D7,AELPFSEL=D6,X[5:0]							
013	80	80	80	80	@WDR REGISTER[15,8] *AECLIP_TH[7:0]							
014	00	00	00	00	@WDR REGISTER[23,16] *AEL_TH[7:0]							
015	FF	FF	FF	FF	@WDR REGISTER[31,24] *AEH_TH[7:0]							
016	8B	8B	76	76	@WDR REGISTER[39,32] *AEW2VE[7:0]							
017	24	24	24	24	@WDR REGISTER[47,40] *AEW2VS[7:0]							
018	ED	ED	F1	F1	@WDR REGISTER[55,48] *AEW2HE[7:0]							
019	07	07	13	13	@WDR REGISTER[63,56] *AEW2HS[7:0]							
01A	81	81	6E	6E	@WDR REGISTER[71,64] *AEW1VE[7:0]							
01B	26	26	20	20	@WDR REGISTER[79,72] *AEW1VS[7:0]							

	NO-OSD-DISPLAY											
ADDR	**MODEL/DATA**				**CONTENT (EEPROM DATA PAGE 0)**							
	PAL		NTSC									
	HI8	NORMAL	HI8	NORMAL	BIT SEGMENTATION EXPLAIN							
ADDR	DATA				D7	D6	D5	D4	D3	D2	D1	D0
01C	B4	B4	C1	C1	@WDR REGISTER[87,80]	*AEW1HE[7:0]						
01D	32	32	43	43	@WDR REGISTER[95,88]	*AEW1HS[7:0]						
01E	00	00	00	00	@WDR REGISTER[103,96]	*SP_ADJ	START POINT ADJUSTMENT					
01F	FF	FF	FF	FF	@WDR REGISTER[111,104]	*TEST_ADDR[7:0]						
020	00	00	00	00	@WDR REGISTER[119,112]	*TEST_CNTL[7:0]						
021	88	88	88	88	@WDR REGISTER[127,120]	*ALPF_TH3[7:4],ALPF_TH4[3:0]						
022	88	88	88	88	@WDR REGISTER[135,128]	*ALPF_TH1[7:4],ALPF_TH2[3:0]						
023	2A	2A	2A	2A	@WDR REGISTER[143,136]	*ALPF_WTSFT[7:5],ALPF_THSFT[4:3],SHPF_SFT[2:0]						
024	99	99	99	99	@WDR REGISTER[151,144]	*COLOR127[7:4],COLOR55[3:0]						
025	99	99	99	99	@WDR REGISTER[159,152]	*COLOR31[7:4],COLOR63[3:0]						
026	49	49	49	49	@WDR REGISTER[167,160]	*CH_SEL[7:4],COLOR12[3:0]						
027	F0	F0	F0	F0	@WDR REGISTER[175,168]	*BACK_SP[7:4].BACK_WT[3:0]						
028	44	44	44	44	@WDR REGISTER[183,176]	*LUT_TAB[7:5],LUT_HPF_SFT[4:2],X[1:0]						
029	E0	E0	E0	E0	@WDR REGISTER[191,184]	*LTIC[7:0]						
02A	C0	C0	C0	C0	@WDR REGISTER[199,192]	*LIT_ON,LSI_ON,HLOG_ON,X[4:0]						
02B	68	68	68	68	@WDR REGISTER[207,200]	*HIST_WT	HISTOGRAM WEIGHT					
02C	18	18	18	18	@WDR REGISTER[215,208]	*LTU-GAIN[7:0]						
02D	FF	FF	FF	FF	@WDR REGISTER[223,216]	*LP-V[7:0]	LENGTH OF VERTICAL ACTIVE AREA					
02E	28	28	28	28	@WDR REGISTER[231,224]	*SP-V[7:0]	START OF VERTICAL ACTIVE AREA					
02F	B2	B2	B2	B2	@WDR REGISTER[239,232]	*LP-H[7:0]	LENGTH OF HORIZONTAL ACTIVE AREA					
030	2E	2E	2E	2E	@WDR REGISTER[247,240]	*SP-H[7:0}	START OF HORIZONTAL ACTIVE AREA					
031	00	00	00	00	@WDR REGISTER[255,248]	*GR_MODE[7:0]	WDR COMMAND'00=WDR OFF, C0=WDR ON'					
032	~03F	~03F	~03F	~03F	NO USED							
040	10	18	18	18	* AWB- STABLE MODE THRESHOLD							
041	~048	~048	~048	~048	NO USED							
049	04	06	07	06	* AWB- TRACKING AREA SETTING							
04A	D0	D0	D0	D0	"@WDR ON ; AE A-READ(SMALL)DATA CUTTING -LOW"							
04B	01	01	01	01	"@WDR ON ; AE A-READ(SMALL)DATA CUTTING -HIGH"							
04C	04	04	04	04	"* AWB- R-CTRL UP / DOWN VALUE (W / B TARGET CENTER(=80) + / - ADDR;04C)"							
04D	80	80	80	80	"* AWB- B-CTRL UP / DOWN VALUE (W / B TARGET CENTER(=80) + / - ADDR;04D)"							
04E	8A	80	8A	80	* AWB- OUTDOOR HALL VALUE							
04F	E0	E0	E0	E0	WDR AE TARGET -LOW							
050	00	00	00	00	WDR AE TARGET-HIGH							
051	44	44	44	44	**changed by AUTO 3MLENS ADJ(0DE)**				ZOOM PULSE LOW 16X LENS			
052	FF	FF	FF	FF	**changed by AUTO 3MLENS ADJ(0DE)**				ZOOM PULSE HIGH 16X LENS			
053	31	33	48	2D	**changed by AUTO AWB ADJ(0CF)**				R-CONTROL 3100K			
054	A0	89	C8	78	**changed by AUTO AWB ADJ(0CF)**				B CONTROL 3100K			
055	5F	60	88	5E	**changed by AUTO AWB ADJ(0CF)**				R-CONTROL 5100K			

	NO-OSD-DISPLAY											
ADDR	**MODEL/DATA**				**CONTENT (EEPROM DATA PAGE 0)**							
	PAL		NTSC									
	HI8	NORMAL	HI8	NORMAL	BIT SEGMENTATION EXPLAIN							
ADDR	DATA				D7	D6	D5	D4	D3	D2	D1	D0
056	5A	54	68	4E	**changed by AUTO AWB ADJ(0CF)**				B CONTROL 5100K			
057	00	00	00	00	@DSP#12C(HAPGN) at AGC							
058	00	00	00	00	@DSP#12C (HAPGN) at AGC							
059	03	03	03	03	"* AWB- RATIO ; 1/3 CENTER TRACKING"							
05A	03	03	03	03	"* AWB- RATIO HIGH ; CENTER AXIS OVER 5100K(OUTDOOR)"							
05B	04	04	04	04	"* AWB- RATIO LOW ; CENTER AXIS BELOW 3100K(INDOOR)"							
05C	E0	E0	E0	E0	SHUTTER START POINT OF IRIS CONTROL PERCENT(FF=100% IRIS MAX)							
05D	80	80	80	80	"@WDR ON; AE DATA CUTTING -LOW"							
05E	02	02	02	02	"@WDR ON; AE DATA CUTTING -HIGH"							
05F	50	50	50	50	"@WDR ON; BLACK BALANCE MAX-DATA (MIN DATA+31)"							
060	40	40	40	40	"@WDR ; AE-TARGET MARGIN; #087,#088 -#060, AT CLIP-COUNTER ON "							
061	10	10	10	10	"@WDR ; CLIP_COUNTER-TH-'HIGH' BYTE "							
062	10	10	10	10	@EIS H-TH-COUNTER							
063	2A	2A	2A	2A	@EIS H-TH							
064	10	10	10	10	@EIS V-TH-COUNTER							
065	2A	2A	2A	2A	@EIS V-TH							
066	08	08	04	04	"@WDR ON; Y ,C GAMMA 1 "							
067	0D	0D	07	07	"@WDR ON; Y ,C GAMMA 2 "							
068	1B	1B	15	15	"@WDR ON; Y,C GAMMA 3 "							
069	32	32	2C	2C	"@WDR ON; Y ,C GAMMA 4 "							
06A	57	57	4D	4D	"@WDR ON; Y,C GAMMA 5 "							
06B	82	82	70	70	"@WDR ON; Y,C GAMMA 6"							
06C	C0	C0	B4	B4	"@WDR ON; Y ,C GAMMA 7"							
06D	F0	F0	F8	F8	"@WDR ON; Y,C GAMMA 8"							
06E	EE	EE	EE	EE	"@WDR ON; ADDR#12C ;YVBKT,YVBK,HBLK,YHBK"							
06F	08	08	08	08	"@WDR ON; ADDR#123;YHPSC,YAPC"							
070	50	50	50	50	"@WDR ON; ADDR#126;YLPFSEL"							
071	10	10	10	10	"@WDR ON; ADDR#134;RED DARK SLICE"							
072	03	03	03	03	"@WDR ON; ADDR#135;BLUE DARK SLICE"							
073	00	00	00	00	"@WDR ON; ADDR#136;GREEN DARK SLICE"							
074	11	11	10	10	@CINEMA F-ZONE LIMIT UP							
075	7D	7D	68	68	@CINEMA F-ZONE LIMIT UP							
076	5A	60	4B	52	@R-GAIN POSITIVE(ADDR.147) at OUTDOOR							
077	55	60	3D	4A	@R-GAIN NEGATIVE(ADDR.148) at OUTDOOR							
078	27	2C	12	21	@R-HUE POSITIVE (ADDR.149) at OUTDOOR							
079	28	3B	17	35	@R-HUE NEGATIVE (ADDR.14A) at OUTDOOR							
07A	33	39	2C	31	@B-GAIN POSITIVE(ADDR.14B) at OUTDOOR							
07B	2C	30	1D	21	@B-GAIN NEGATIVE(ADDR.14C) at OUTDOOR							

	NO-OSD-DISPLAY											
ADDR	**MODEL/DATA**				**CONTENT (EEPROM DATA PAGE 0)**							
	PAL		NTSC									
	HI8	NORMAL	HI8	NORMAL	BIT SEGMENTATION EXPLAIN							
ADDR	DATA				D7	D6	D5	D4	D3	D2	D1	D0
07C	1C	1A	24	26	@B-HUE POSITIVE (ADDR.14D) at OUTDOOR							
07D	10	0E	15	0D	@B-HUE NEGATIVE (ADDR.14E) at OUTDOOR							
07E	50	50	50	50	@NEGA BLC TARGET-'L'							
07F	00	00	00	00	@NEGA BLC TARGET-'H'							
080	04	04	04	04	"@AE; AE A-WINDOW WEIGHT '05'=50%"							
081	5E	5E	5E	5E	"@AE; SPOTLIGHT AE-TARGET 'L'"							
082	00	00	00	00	"@AE; SPOTLIGHT AE-TARGET 'H'"							
083	90	90	90	90	@DIGITAL CLAMP CONTROL START AGC							
084	0C	0C	0C	0C	@AGC MAX , DIGITAL CLAMP CONTROL(ADDR.#118)							
085	90	90	90	90	* AWB- W / B DATA-TH							
086	02	02	02	02	* AWB- LUMINANCE AREA NUMBER							
087	00	00	00	00	"@AE; BLC / WDR , AE TARGET 'L'"							
088	02	02	02	02	"@AE; BLC / WDR, AE TARGET 'H'"							
089	75	75	75	75	@SEPIA CDS-R							
08A	3A	3A	3A	3A	@SEPIA CDS-G							
08B	00	00	00	00	"@AE; SAND&SNOW MODE AE TARGET 'L'"							
08C	02	02	02	02	"@AE; SAND&SNOW MODE AE TARGET 'H'"							
08D	00	00	00	00	**changed by AUTO 3MLENS ADJ(0DE)**				@FOCUS TELE MARGIN LOW BYTE(CANON X22 LENS)			
08E	00	00	00	00	**changed by AUTO 3MLENS ADJ(0DE)**				@FOCUS TELE MARGIN HIGH BYTE(CANON X22 LENS)			
08F	F0	F0	F0	F0	**changed by AUTO 3MLENS ADJ(0DE)**				@FOCUS WIDE MARGIN LOW BYTE(CANON X22 LENS)			
090	FF	FF	FF	FF	**changed by AUTO 3MLENS ADJ(0DE)**				@FOCUS WIDE MARGIN HIGH BYTE(CANON X22 LENS)			
091	F8	09	00	0A	@CCD H-PIXEL NUMBER -LOW BYTE							
092	02	02	03	02	@CCD H-PIXEL NUMBER -HIGH BYTE							
093	23	23	F7	F7	@CCD V LINE NUMBER -LOW BYTE							
094	01	01	00	00	@CCD V LINE NUMBER -HIGH BYTE							
095	1C	0C	16	09	@CCD V SKIP LINE DEFAULT VALUE							
096	B9	46	50	EE	@CCD V LINE NUMBER LOW BYTE							
097	02	02	02	01	@CCD V LINE NUMBER HIGH BYTE							
098	98	98	98	98	"@DSP IC ADDR #41H ;ART DSE LEVEL"							
099	B8	B8	B8	B8	"@DSP IC ADDR #1CH ;NEGA MODE WHITE CLIP LEVEL"							
09A	30	30	30	30	* AWB- START HALL VALUE							
09B	1C	1C	1C	1C	"@DSE- MOSAIC SIZE; DSP IC ADDR #39H "							
09C	F4	F4	F4	F4	"@D / ZOOM MAX RATIO; CO=4X, EE=14.3X, F4= 20X "							
09D	68	68	68	68	@ NOISE SLICE START AGC VALUE							
09E	0B	0B	0B	0B	@ HAP(DSP #10BH) MIN VALUE AT AGC MAX							
09F	0B	0B	0B	0B	@ VAP(DSP 310C) MIN VALUE AT AGC MAX							
0A0	18	20	18	20	@ YAP(DSP #10DH) MAX VALUE AT AGC MAX							
0A1	A0	A0	A0	A0	@ CHROMA SUPPRESS PERCENT							

	NO-OSD-DISPLAY				
ADDR	**MODEL/DATA**				**CONTENT (EEPROM DATA PAGE 0)**
	PAL		NTSC		
	HI8	NORMAL	HI8	NORMAL	BIT SEGMENTATION EXPLAIN
ADDR	DATA				D7 D6 D5 D4 D3 D2 D1 D0
0A2	60	60	60	60	@ CHROMA SUPPRESS START AGC VALUE
0A3	00	00	00	00	**changed by AUTO IRIS ADJ(0CE)** @ IRIS CONTROL MAX LOW BYTE
0A4	05	05	05	05	**changed by AUTO IRIS ADJ(0CE)** @ IRIS CONTROL MAX HIGH BYTE
0A5	B4	B4	B4	B4	* AWB -AT OUTDOOR,TRACKING AMOUNT(IN CASE,INDOOR DATA INPUT) ,B4=70%,FF=0%(NO TRACKING)
0A6	C0	C0	C0	C0	* AWB- WB AGC% , STOP POINT (80=50%, C0=75%)
0A7	89	89	89	89	@HALL WIDTH AT HALL ADJUST
0A8	E5	E5	E5	E5	**changed by AUTO 3MLENS ADJ(0DE)** @ZOOM RESET LOW(16X, 22X LENS)
0A9	88	88	88	88	**changed by AUTO 3MLENS ADJ(0DE)** @ZOOM RESET HIGH(16X, 22X LENS)
0AA	80	80	80	80	**changed by ZOOM VR CENTER(0D6)** @ZOOM VR CENTER VALUE
0AB	20	20	20	20	@ZOOM VR CENTER MARGIN(ZOOM STOP PERIOD)
0AC	34	30	34	30	**changed by AUTO AGC ADJ(0DB)** @AGC MIN VALUE
0AD	A8	A8	A8	A8	**changed by AUTO AGC ADJ(0DB)** @AGC MAX VALUE
0AE	0B	0B	09	09	"REMOCON ZOOM SPEED; 22X LENS -PAL:0B NTSC:09 "
0AF	02	02	02	02	AF ZIGZAG AMOUNT AT BASIC ZOOM SPEED
0B0	68	28	5B	30	@IN AGC AUTO ADJUST (ADDR.0DB), SHUTTER CONTROL OF AGC MIN ADJUST OPERATING(D0='0'FIX)
0B1	2A	2B	08	01	@IN AGC AUTO ADJUST (ADDR.0DB), SHUTTER CONTROL OF AGC MAX ADJUST OPERATING(D7='1'FIX)
0B2	~0B6	~0B6	~0B6	~0B6	NO USED
0B7	1A	1A	16	16	"ZOOM MAX SPEED ;22X LENS PAL:19H,NTSC:15H"
0B8	3A	3A	3A	3A	@HALL REF START, AT AUTO HALL ADJUST ADDR.0CD
0B9	4C	4C	4C	4C	@HALL GAIN START, AT AUTO HALL ADJUST ADDR.0CD
0BA	40	40	40	40	**changed by AUTO HALL ADJ(0CD)** @HALL MIN VALUE
0BB	C0	C0	C0	C0	**changed by AUTO HALL ADJ(0CD)** @HALL MAX VALUE
0BC	E0	D0	D0	D0	@AE TARGET-LOW BYTE
0BD	00	00	00	00	@AE TARGET-HIGH BYTE
0BE	B0	B0	B0	B0	**changed by AUTO IRIS ADJ(0CE)** @IRIS CONTROL MIN LOW BYTE
0BF	09	09	09	09	**changed by AUTO IRIS ADJ(0CE)** @IRIS CONTROL MIN HIGH BYTE
0C0	18	18	18	18	**changed by AUTO 3MLENS ADJ(0DE)** @FOCUS RESET LOW(16X,22X LENS)
0C1	82	82	82	82	**changed by AUTO 3MLENS ADJ(0DE)** @FOCUS RESET HIGH(16X,22X LENS)
0C2	40	40	40	40	@HALL CLOSE TARGET
0C3	~C6	~C6	~C6	~C6	NO USED
0C7	10	10	10	10	EIS GYRO-RESET TIME '0C=3.7SEC'
0C8	11	11	11	11	EIS START TIME ('10'=4.4SEC) AFTER EIS GYRO-RESET
0C9	65	65	65	65	@IRIS CONTROL OF ZOOM WIDE POSITION AT LENS ADJUSTMENT
0CA	24	24	24	24	@QB_GCTRL
0CB	48	48	48	48	@AETAR L (FLEX-ZONE)
0CC	00	00	00	00	@AETAR H (FLEX-ZONE)
0CD	**FF**	**FF**	**FF**	**FF**	**@@HALL AUTO ADJUST**
0CE	**FF**	**FF**	**FF**	**FF**	**@@IRIS AUTO ADJUST**

	NO-OSD-DISPLAY				
ADDR	**MODEL/DATA**				**CONTENT (EEPROM DATA PAGE 0)**
	PAL		NTSC		
	HI8	NORMAL	HI8	NORMAL	BIT SEGMENTATION EXPLAIN
ADDR	DATA				D7 D6 D5 D4 D3 D2 D1 D0
0CF	**FF**	**FF**	**FF**	**FF**	**@@W/B AUTO ADJUST**
0D0	**FF**	**FF**	FF	FF	@@LENS AUTO INFINITE ZOOM TRACK(DON'T USE IN SERVICE FIELD)
0D1	68	68	A0	A0	FIND AGC ADJUST TARGET SHUTTER CONTROL AT AGC AUTO ADJUST (ADDR.0DB)
0D2	~0D5	~0D5	~0D5	~0D5	NO USED
0D6	**FF**	**FF**	**FF**	**FF**	**@@ZOOM VR LEVER CENTER FINDING**
0D7	01	01	01	01	@@ZOOM / FOCUS CHK=ONE AF ENABLE BIT 00~03
0D8	~0DA	~0DA	~0DA	~0DA	NO USED
0DB	FF	FF	FF	FF	**@@AGC AUTO ADJUST (ADDR. 0B0,0B1,0D1,0AC,0AD)**
0DC	FF	FF	FF	FF	"@LENS ZOOM TRACK CHECKING ;CONFIRM,DATA UP,DOWN KEY"
0DD	FF	FF	FF	FF	NO USED
0DE	FF	FF	FF	FF	"**@@LENS 3M ZOOM TRACK ADJUST =SERVICE FIELD MODE (KEEP DISTANCE; 3M+/-1Cm)**"
0DF	A0	A0	A0	A0	@EEPROM -TABLE -INITIAL ('99'+CONFIRM =CAMERA ONLY, 'AA'+CONFIRM=CAM+VCR INITIAL)
0E0	~0FF	~0FF	~0FF	~0FF	**VCR ADDRESS & DATA**

"CAMERA ADJUST MODE, EEPROM ADDRESS SEQUENCE & DATA OF PAGE 1"

ADDR	MODEL/DATA				CONTENT (EEPROM DATA PAGE 1)							
	PAL		NTSC									
	HI8	NORMAL	HI8	NORMAL	BIT SEGMENTATION EXPLAIN							
ADDR	DATA				D7	D6	D5	D4	D3	D2	D1	D0
100	00	00	00	00	EMODE(2:0)='000'internal reset			VSKIP='0'	CINEMA ='0'	ND TEST	DSYNC	JITNSYNC
101	A0	A0	A0	A0	ADCK	FWCK	SCK	LALT	HSP	DOSEL	H_MAX_SEL(1:0)	
102	C0	C0	C0	C0	SHTR='11' HSS		H2DEL(3:0) 0~15nSEC DELAY ADJUST				PBLK_SEL	HSSC(8)
103	00	00	00	00	|---- HIGH SHUTTER SPEED CONTROL (8:0) ----|							
104	0D	19	0D	19	|---- GHDLY(7:0) -128 ~+ 127 ----|							
105	07	03	06	03	|---- H1DLY[3:0] 0~+15nS ----|				|---- RGDLY[3:0] -8~+7nS ----|			
106	50	48	31	38	|---- SHP_DLY[3:0] -8~+7nS				|---- SHD_DLY[3:0] -8~+7nS ----|			
107	70	40	40	40	FLALTSEL	ADCKDLY[2:0] 0~+7nS			DSCKSEL	FWCKDLY[2:0] 0~+7nS		
108	0D	0D	0D	0D	|---- HCNTSET[7:0] ----|							
109	00	00	00	00	|---- LSSC[7:0] low speed shutter ----|							
10A	00	00	00	00	DCKSEL	|---- VCNTSET[6:0] ----|						
10B	0D	0D	0D	0D	* WDR-AF CLIMB NOISE THRESHOLD							
10C	50	50	50	50	* WDR-AF CENTER DATA THRESHOLD LOW							
10D	01	01	01	01	* WDR-AF CENTER DATA THRESHOLD HIGH							
10E	0C	0C	0C	0C	* WDR-AF PEAK NOISE THRESHOLD LOW							
10F	09	09	09	09	* WDR-AF PEAK NOISE THRESHOLD HIGH							
					CLUSTER 1 (HEADER[3:0] = 4'b0001) ENCODER/ DEFECT COMPENSATION							
110	50	52	50	52	|---- C-SYNC[7:0] c.sync level 0~255 ----|							
111	01	01	01	03	|---- SETUP[7:0] setup level 0~255 ----|							
112	00	00	00	00	|---- EBURST[7:0] burst phase control :NTSC only ----|							
113	50	10	50	10	FSC4	EYDLY[2:0]000=-4PCK,111=+3PCK			UV_CTRL	|---- EBURST_H[2:0] ----|		
114	D8	D8	C8	CC	|---- EUSC[7:0] "-128~+127 ;B-Y BURST VALUE" ----|							
115	28	28	00	00	|---- EVSC[7:0] "-128~+127 ;R-Y BURST VALUE" ----|							
116	00	00	00	00	X	X	X	X	X	NOTBC	EXTDAC	PD1
117	03	03	03	03	X	X	AD[1:0] AD CLK DLY		D-CLP	S2	S1	S0
118	0D	10	0E	10	|----- CLAMP_OFFSET[7:0] ----|							
119	30	30	30	30	|----- DEFECY_THRESHOLD[7:0] 0~255 ----|							
11A	00	00	00	00	X	X	X	X	RAM-OUT	|---- RAM-OUT[8:6]		
11B	00	00	00	00	|---- RAM-OUT[5:0] ----|						RAM-OUT[9:8]	
11C	00	00	00	00	|---- RAM-OUT[7:0] ----|							
11D	00	00	00	00	X	|---- PFINDCNT[5:0] ----|						
11E	0E	0A	0A	0A	* AWB- AREA INTERVAL FORM CENTER AXIS							
11F	03	03	03	03	LENS HYSTERESIS ZOOM TRACKING CURVE							
					CLUSTER 2 (HEADER[3:0] = 4'b0010) LUMINANCE							
120	66	66	66	66	"YVBKTH[1;0]"		YVBKG[1:0]		"YHBKTH[1;0]"		YHBKG[1:0]	
121	D9	0C	D9	10	Y_H_GAIN[1:0]		X	|---- Y_H_POSI_GAIN[4:0] ----|				
122	94	54	94	4D	Y_L_GAIN[1:0]		YOLD-GAMMA	|---- Y_V_POSI_GAIN[4:0] ----|				

ADDR	MODEL/DATA				CONTENT (EEPROM DATA PAGE 1)							
	PAL		NTSC									
	HI8	NORMAL	HI8	NORMAL	BIT SEGMENTATION EXPLAIN							
ADDR	DATA				D7	D6	D5	D4	D3	D2	D1	D0
123	02	03	03	03	X	X	|---- YA_NOISE_SLICE[5:0] ----|					
124	98	78	A0	78	|---- YHL_SC[7:0] ----|							
125	37	37	37	37	|---- YEDGE_SC[7:0] ----|							
126	50	50	50	50	X	YVAPPSEL	YEGCS	YHLCS'0'=ON	YLPFSEL	|---- "YSCDLY[2;0]" ----|		
127	0A	30	0A	30	|---- YHINS[6:0] aperture noise slice level after gamma correction. ----|							YNEGA / POSI
128	E4	E8	E4	E0	|---- YWC[7:0] ----|							
129	84	8A	84	8A	|---- YGAIN[7:0] X0~X2 ----|							
12A	00	00	00	00	X	YENHANTH[2:0]			X	X	YENHANG[1:0]	
12B	08	08	08	08	|---- YART[2:0] ----|		|---- YHI-A-GAIN[1:0] ----|					
12C	AF	6E	AF	7F	|---- HAPGN[4:0] ----|					YHCLIP[3:2]		H_C_SUP[4]
12D	81	81	81	81	|---- VAPGN[4:0] ----|					YHCLIP[1:0]		E_C_SUP[4]
12E	88	B8	88	B8	H_C_SUPP_GAIN[3:0]high light color suppress				F_FALL[3:0] edge color suppress			
12F	58	50	50	50	|---- Y_APERTUTR_CLIP[7:0] ----|							
					CLUSTER 3 (HEADER[3:0] = 4'b0011) LUMINANCE & CHROMA							
130	2B	2B	2B	2B	YHPEG[1:0]		YVPEG[1:0]			YHEMBSEL[1:0]		YVEMBSEL[1:0]
131	30	30	30	30	|---- YPST[7:0] pastel level ----|							
132	30	30	30	30	|---- YEMB[7:0] embossing level ----|							
133	00	00	00	00	X	X	X	X	YEMBOSS	YPASTEL	YIN-OUT	YWINDOW
134	03	06	06	05	|---- CRDS[7:0] r-dark-slice ----|							
135	FD	03	FC	04	|---- CBDS[7:0] b-dark-slice							
136	FD	00	00	00	|---- CGDS[7:0] g-dark-slice							
137	31	34	53	34	|---- CRWB[7:0] R-white-balance-control							
138	A0	8C	8F	A0	|---- CBWB[7:0] B-white-balance-control							
139	24	24	24	24	|---- CGWB[7:0] G-white-balance-control							
13A	07	07	07	07	|---- "CSLOPE1[7:0]COLOR_KEY_SLOPE_1;-64~+64"							
13B	E6	E6	E6	E6	|---- "CSLOPE2[7:0]COLOR_KEY_SLOPE_2;-64~+64"							
13C	29	29	29	29	"COLOR KEY OPTION :0(RED)~4;13A,13B,13C ADDRESS"				CSLOPE1 H[9]	CSLOPE1 H[8]	CSLOPE2 H[9]	CSLOPE2 H[9]
13D	00	00	00	00	X	X	X	CNEGA	CBAR	CMONO	CKEY	CKEY-NEGA
13E	FF	FF	FF	FF	DUMMY							
13F	FF	FF	FF	FF	DUMMY							
					CLUSTER 4 (HEADER[3:0] = 4'b0100) CHROMA							
140	17	07	17	37	X	X	CHCON(S1/S2)	CVCON(cr/cb)	CYLSEL	CRMS	CBMS	C-GAMMA-SEL
141	42	42	42	42	|---- CRCOEF[7:0] cr-matrix-coefficient ----|							
142	66	66	66	66	|---- CBCOEF[7:0] cr-matrix-coefficient ----|							
143	59	59	59	59	|---- CRRG[7:0] R-G signal coeff. for R-Y signal creating. ----|							
144	D9	D9	D9	D9	|---- CBRG[7:0] R-G signal coeff. for B-Y signal creating. ----|							
145	F2	F2	F2	F2	|---- CRBG[7:0] B-G signal coeff. for R-Y signal creating. ----|							
146	72	72	72	72	|---- CBBG[7:0] B-G signal coeff. for B-Y signal creating. ----|							
147	70	76	6C	67	|---- CRYGP[7:0] R-Y GAIN CONTROL + ----|							

ADDR	MODEL/DATA				CONTENT (EEPROM DATA PAGE 1)							
	PAL		NTSC									
	HI8	NORMAL	HI8	NORMAL	BIT SEGMENTATION EXPLAIN							
ADDR	DATA				D7	D6	D5	D4	D3	D2	D1	D0
148	78	7E	60	70	|----	CRYGN[7:0] R-Y GAIN CONTROL -						----|
149	1D	1D	19	20	|----	CRYHP[7:0] R-Y HUE CONTROL +						----|
14A	2A	29	1A	40	|----	CRYHN[7:0] R-Y HUE CONTROL -						----|
14B	3D	43	33	38	|----	CBYGP[7:0] B-Y GAIN CONTROL +						----|
14C	33	35	24	24	|----	CBYGN[7:0] B-Y GAIN CONTROL -						----|
14D	50	3C	34	39	|----	CBYHP[7:0] B-Y HUE CONTROL +						----|
14E	08	05	23	0A	|----	CBYHN[7:0] B-Y HUE CONTROL -						----|
14F	80	80	80	80	|----	CGAIN[7:0] x0~ x2						----|
					CLUSTER 5 (HEADER[3:0] = 4'b0101) GAMMA							
150	08	08	04	04	|----	YG1[7:0]		@Y GAMMA POINT 1				----|
151	0D	0D	07	07	|----	YG2[7:0]		@Y GAMMA POINT 2				----|
152	1B	1B	15	15	|----	YG3[7:0]		@Y GAMMA POINT 3				----|
153	32	32	2C	2C	|----	YG4[7:0]		@Y GAMMA POINT 4				----|
154	57	57	4D	4D	|----	YG5[7:0]		@Y GAMMA POINT 5				----|
155	82	82	70	70	|----	YG6[7:0]		@Y GAMMA POINT 6				----|
156	C0	C0	B4	B4	|----	YG7[7:0]		@Y GAMMA POINT 7				----|
157	F0	F0	F8	F8	|----	YG8[7:0]		@Y GAMMA POINT 8				----|
158	06	04	04	04	|----	CGAMMA1[7:0]		@C GAMMA POINT 1				----|
159	0C	08	07	07	|----	CGAMMA2[7:0]		@C GAMMA POINT 2				----|
15A	1A	15	18	18	|----	CGAMMA3[7:0]		@C GAMMA POINT 3				----|
15B	2C	2B	30	30	|----	CGAMMA4[7:0]		@C GAMMA POINT 4				----|
15C	4C	4C	50	50	|----	CGAMMA5[7:0]		@C GAMMA POINT 5				----|
15D	78	78	78	78	|----	CGAMMA6[7:0]		@C GAMMA POINT 6				----|
15E	B6	B6	B8	B8	|----	CGAMMA7[7:0]		@C GAMMA POINT 7				----|
15F	F0	F0	F8	F8	|----	CGAMMA8[7:0]		@C GAMMA POINT 8				----|
					CLUSTER 6 (HEADER[3:0] = 4'b0110) D.ZOOM & EIS							
160	AE	AE	AE	AE	D.ZOOM	ZOOM-BYPASS	D.EFFECT	VADJ[1:0]		HADJ[1:0]		Z_DELAY
161	00	00	00	00	|----	VZOOM[7:0]						----|
162	1C	0C	18	09	|----	VZSKIP[7:0]						----|
163	00	00	00	00	|----	VZOFFE[7:0] EVEN FIELD LINE OFFSET						----|
164	00	00	00	00	|----	VZOFFO[7:0] ODD FIELD LINE OFFSET						----|
165	2A	00	2A	00	|----	HZOOM[7:0]						----|
166	00	00	00	00	MOSAIC H-ADJ[1:0]		X	X	X	X	X	HZSTR[8]
167	3E	00	38	00	|----	HZSTR[7:0]						----|
168	09	00	AF	00	|----	HZOFS[7:0]						----|
169	00	00	00	00	|----	MOSAIC[5:0] 4d=8x8,5d=10x10,63d=126x126					----|	MOSAIC V-ADJ[1:0]
16A	02	02	03	02	FE MODE[1:0] 01=F,10=H.M		X	X	X	X	FCM[9:8]	
16B	F8	09	00	0A	|----	FCM[7:0]						----|
16C	01	01	01	01	X	X	X	X	X	X	HMIRROR[9:8]	

ADDR	MODEL/DATA				CONTENT (EEPROM DATA PAGE 1)							
	PAL		NTSC									
	HI8	NORMAL	HI8	NORMAL	BIT SEGMENTATION EXPLAIN							
ADDR	DATA				D7	D6	D5	D4	D3	D2	D1	D0
16D	7C	07	84	05	|----	HMIRROR[7:0]						----|
16E	00	00	00	00	|----	CBLK-ADJ[3:0]		----|	CCIR-Y	CCIR-C	X	SCKIV
16F	FF	FF	FF	FF	DUMMY							
					CLUSTER 7 (HEADER[3:0] = 4'b0111) AF/AE							
170	06	06	03	03	|----	OAFHS-W1	"@AF WINDOW 1 H-START POINT;3~252"					----|
171	EC	EC	F5	F5	|----	OAFHE-W1	"@AF WINDOW 1 H-END POINT;5~254"					----|
172	04	04	03	03	|----	OAFVS-W1	"@AF WINDOW 1 V-START POINT;3~152"					----|
173	8D	8D	76	76	|----	OAFVE-W1	"@AF WINDOW 1 V-END POINT;5~154"					----|
174	4D	4D	52	52	|----	OAFHS-W2	"@AF WINDOW 2 H-START POINT;1~254"					----|
175	A8	A8	AC	AC	|----	OAFHE-W2	"@AF WINDOW 2 H-END POINT;3~256"					----|
176	29	29	25	25	|----	OAFVS-W2	"@AF WINDOW 2 V-START POINT;1~154"					----|
177	71	71	5F	5F	|----	OAFVE-W2	"@AF WINDOW 2 V-END POINT;3~156"					----|
178	37	37	43	43	|----	OAEHS-WA	"@ AE WINDOW A H-START POINT;1~254"					----|
179	B8	B8	C1	C1	|----	OAEHE-WA	"@ AE WINDOW A H-END POINT;3~256"					----|
17A	26	26	20	20	|----	OAEVS-WA	"@ AE WINDOW A V-START POINT;1~155"					----|
17B	81	81	6E	6E	|----	OAEVE-WA	"@ AE WINDOW A V-END POINT;3~156"					----|
17C	07	07	0A	0A	|----	OAEHS-WB	"@ AE WINDOW B H-START POINT;1~254"					----|
17D	ED	ED	EE	EE	|----	OAEHE-WB	"@ AE WINDOW B H-END POINT;3~256"					----|
17E	24	24	1E	1E	|----	OAEVS-WB	"@ AE WINDOW B V-START POINT;1~155"					----|
17F	8B	8B	73	73		OAEVE-WB	"@ AE WINDOW B V-END POINT;3~156"					----|
					CLUSTER 8 (HEADER[3:0] = 4'b1000) AWB							
180	07	0A	0A	0A	|----	OAWBHS	"@ AWB WINDOW H-START POINT;1~254"					----|
181	ED	ED	EE	EE	|----	OAWBHE	"@ AWB WINDOW H-END POINT;3~256"					----|
182	24	24	1E	1E	|----	OAWBVS	"@ AWB WINDOW V-START POINT;1~155"					----|
183	8B	8B	73	73	|----	OAWBVE	"@ AWB WINDOW V-END POINT;1~156"					----|
184	FF	FF	FF	FF	|----	OYH-AE	"@Y-HIGH-THRESHOLD FOR AE;0~255"					----|
185	00	00	00	00	|----	OYL-AE	@Y-LOW -THRESHOLD FOR AE					----|
186	90	90	90	90	|----	OYH-AWB	@Y-HIGH-THRESHOLD FOR AWB					----|
187	30	30	30	30	|----	OYL-AWB	@Y-LOW -THRESHOLD FOR AWB					----|
188	C0	C0	C0	C0	|----	OAF_CLIP_TH[7:0] AF CLIP COUNTER THRESHOLD						----|
189	80	80	80	8A	|----	OAE_CLIP_TH[7:0] AE CLIP COUNTER THRESHOLD						----|
18A	02	02	02	02	OVAF	OLPFSEL	OFILPASS	OYISEL	OAWBSEL	|----	OZNSEL[2:0]	----|
18B	00	00	00	00	X	X	X	X	ODMTST	OAWBC SEL	ORBSEL	OAWB AREA
18C	FF	FF	FF	FF	DUMMY							
18D	FF	FF	FF	FF	DUMMY							
18E	FF	FF	FF	FF	DUMMY							
18F	FF	FF	FF	FF	DUMMY							
					CLUSTER 9 (HEADER[3:0]=4'b1001 ,AWB							
190	1F	1F	1F	1F	X	X	X	|----	ORYTH[4:0]			----|

ADDR	MODEL/DATA				CONTENT (EEPROM DATA PAGE 1)							
	PAL		NTSC									
	HI8	NORMAL	HI8	NORMAL	BIT SEGMENTATION EXPLAIN							
ADDR	DATA				D7	D6	D5	D4	D3	D2	D1	D0
191	1F	1F	1F	1F	X	X	X	|---- OBYTH[4:0] ----|				
192	30	30	30	30	|---- "OAWBSL 1[7:0]; 0~15, R-Y / B-Y CHART SLOPE 1 FOR AWB" ----|							
193	15	15	15	15	|---- "OAWBSL 2[7:0]; 0~15, R-Y / B-Y CHART SLOPE 2 FOR AWB" ----|							
194	70	70	70	70	|---- "OAWBSL 3[7:0]; 0~15, R-Y / B-Y CHART SLOPE 3 FOR AWB" ----|							
195	60	60	60	60	|---- "OAWBSL 4[7:0]; 0~15, R-Y / B-Y CHART SLOPE 4 FOR AWB" ----|							
196	20	20	20	20	|---- "OAWBSL 5[7:0]; 0~15, R-Y / B-Y CHART SLOPE 5 FOR AWB" ----|							
197	05	05	05	05	|---- "OAWBSL 6[7:0]; 0~15, R-Y / B-Y CHART SLOPE 6 FOR AWB" ----|							
198	34	34	34	34	X	X	|---- "OAWB_DETECT_R-Y_POINT A[5:0] ;0~63" ----|					
199	1C	1C	1C	1C	X	X	|---- "OAWB_DETECT_R-Y_POINT B[5:0] ;0~63" ----|					
19A	18	18	18	18	X	X	|---- "OAWB_DETECT_R-Y_POINT C[5:0]; 0~63" ----|					
19B	28	28	28	28	X	X	|---- "OAWB_DETECT_R-Y_POINT D[5:0] ;0~63" ----|					
19C	18	18	18	18	X	X	|---- "OAWB_DETECT_B-Y_POINT A[5:0] ;0~63" ----|					
19D	28	28	28	28	X	X	|---- "OAWB_DETECT_B-Y_POINT B[5:0] ;0~63" ----|					
19E	1E	1E	1E	1E	X	X	|---- "OAWB_DETECT_B-Y_POINT C[5:0]; 0~63" ----|					
19F	16	16	16	16	X	X	|---- "OAWB_DETECT_B-Y_POINT D[5:0] ;0~63" ----|					
					CLUSTER 10 (HEADER[3:0] = 4'b1010) AF DATA1							
1A0	03	03	03	03	* AF CENTER AREA DATA SHIFT COEFF. ----|							
1A1	02	02	02	02	* AF ALL AREA DATA SHIFT COEFF. ----|							
1A2	C0	C0	C0	C0	* AF ALL AREA FILTER1 DATA CUTTING LEVEL-LOW ----|							
1A3	01	01	01	01	* AF ALL AREA FILTER1 DATA CUTTING LEVEL-HIGH ----|							
1A4	00	00	00	00	* AF ALL AREA FILTER2 DATA CUTTING LEVEL-LOW ----|							
1A5	01	01	01	01	* AF ALL AREA FILTER2 DATA CUTTING LEVEL-HIGH ----|							
1A6	A0	A0	A0	A0	* AF CENTER AREA FILTER1 DATA CUTTING LEVEL-LOW. ----|							
1A7	00	00	00	00	* AF CENTER AREA FILTER1 DATA CUTTING LEVEL-HIGH ----|							
1A8	80	80	80	80	* AF CENTER AREA FILTER2 DATA CUTTING LEVEL-LOW. ----|							
1A9	00	00	00	00	* AF CENTER AREA FILTER2 DATA CUTTING LEVEL-HIGH ----|							
1AA	18	18	18	18	* AE VARIATION THRESHOLD FOR AF ----|							
1AB	20	20	20	20	* AF INITIAL DATA STABLE COEFF. ----|							
1AC	0A	0A	0A	0A	* AF CLIMB NOISE THRESHOLD							
1AD	16	16	16	16	* AF CLIMB SPEED DOWN THRESHOLD1							
1AE	10	10	10	10	* AF CLIMB DATA VARIATION THRESHOLD							
1AF	80	80	80	80	* AF PEAK CHECKING THRESHOLD							
					CLUSTER 11 (HEADER[3:0] = 4'b1011) ,AF DATA2							
1B0	10	10	10	10	* AF ZIGZAG NOISE THRESHOLD1 ----|							
1B1	23	23	28	28	* AF ZIGZAG CHECKING TIME1 ----|							
1B2	30	30	30	30	* AF ZIGZAG NOISE THRESHOLD2 ----|							
1B3	32	32	3C	3C	* AF ZIGZAG CHECKING TIME2 ----|							
1B4	20	20	20	20	* AF ZIGZAG NOISE THRESHOLD3 ----|							
1B5	08	08	08	08	* AF PEAK CONFIRM THRESHOLD1 ----|							

ADDR	MODEL/DATA				CONTENT (EEPROM DATA PAGE 1)							
	PAL		NTSC									
	HI8	NORMAL	HI8	NORMAL	BIT SEGMENTATION EXPLAIN							
ADDR	DATA				D7	D6	D5	D4	D3	D2	D1	D0
1B6	07	07	07	07	* AF PEAK CONFIRM CONTINUE COUNT							----|
1B7	1F	1F	1F	1F	* AF PROGRAM OPTION1							----|
1B8	18	18	18	18	* AF CENTER AREA AGC CUTTING PERCENT							----|
1B9	30	30	30	30	* AF ALL AREA AGC CUTTING PERCENT							----|
1BA	16	16	16	16	* AF CLIMB SPEED DOWN THRESHOLD2							----|
1BB	14	14	14	14	* AF PEAK CLIMB RATIO							----|
1BC	10	10	10	10	* AF CENTER AREA CUTTING DATA FOR PATROL-LOW							
1BD	10	10	10	10	* AF OPTION2							
1BE	20	20	20	20	* AF ALL AREA CUTTING CUTTING DATA FOR PATROL-LOW							
1BF	00	00	00	00	* AF ALL AREA CUTTING CUTTING DATA FOR PATROL-HIGH							
					"**CLUSTER 12 (HEADER[3:0] = 4'b1100); AWB/AE**"							
1C0	1E	1E	1E	1E	* AF PEAK CONFIRM SPEED UP RATIO							
1C1	25	25	25	25	* AE AUTO MODE CONTROL SPEED DOWN RANGE							----|
1C2	40	40	40	40	* AE SPOTLIGHT MODE CONTROL SPEED DOWN RANGE							----|
1C3	04	04	04	04	* AE AUTO MODE CONTROL SPEED DOWN REFERENCE							----|
1C4	10	10	10	10	* AWB CUTTING THRESHOLD1							----|
1C5	10	10	10	10	* AWB CUTTING THRESHOLD2							----|
1C6	40	40	40	40	* AWB CUTTING THRESHOLD3							----|
1C7	40	40	40	40	* AWB CUTTING THRESHOLD4							----|
1C8	00	00	00	00	* AWB CUTTING THRESHOLD15							----|
1C9	24	24	24	24	* AE OFFSET BORDER							----|
1CA	0C	0C	0C	0C	* AE SPEED OFFSET COUNTER							----|
1CB	6A	60	6A	60	* AWB HALL STOP AT SPOTLIGHT MODE						----|	
1CC	8A	80	8A	80	* AWB HALL AT EIS MODE							----|
1CD	F0	F0	F0	F0	* AWB HALL STOP AT SPORTS MODE							----|
1CE	F0	F0	F0	F0	* AWB HALL AT PORTRAIT MODE							
1CF	F0	F0	F0	F0	* AWB HALL AT SAND&SNOW MODE							
					"**CLUSTER 13 (HEADER[3:0] = 4'b1101); DECODER 1**"							
1D0	~1FC	~1FC	~1FC	~1FC	FIXED							----|
1FD	~1FF	~1FF	~1FF	~1FF	MICOM VERSION							

CHANGED DATA BY MODEL

ADDR	DATA				CONTENT	APPLY MODEL
	PAL		NTSC			
	HI8	NORMAL	HI8	NORMAL	BIT SEGMENTATION EXPLAIN	
001	-	**40**	-	**40**	* OPTION SELECT(WDR ,M / FOCUS RING,REMOCON)	VP-A30, SC-A30
104	-	07	-	07	* GLOBAL DELAY	
095	08	-	-	-	* CCD V-SKIP LINE	VP-A800
096	46	-	-	-	* CCD V-LINE NUMBER- LOW BYTE	
162	08	-	-	-	* CCD V-SKIP LINE	
165	00	-	-	-	* H-ZOOM	
167	00	-	-	-	* H-START-POINT	

5-2-2 Camera System Adjustment

Note : From now on, the structure of every adjustment is as follows.

Step	Adjustment Item
1) Mode and input signal/ alignment tape 2) Test point and ADJ. part 3) And after Result and Remarks	

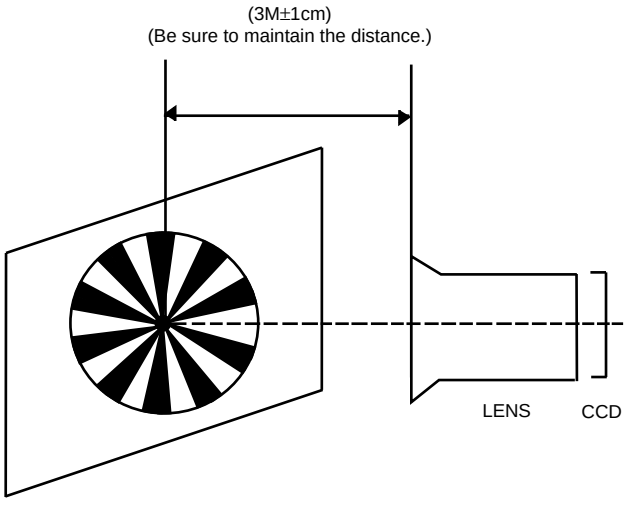
Note : The on-screen display information.
"XX XX" means arbitrary value.
It can be different number depend on the conditions.

ODF	T.INI	XX	XX

1. Focus to zoom tracking

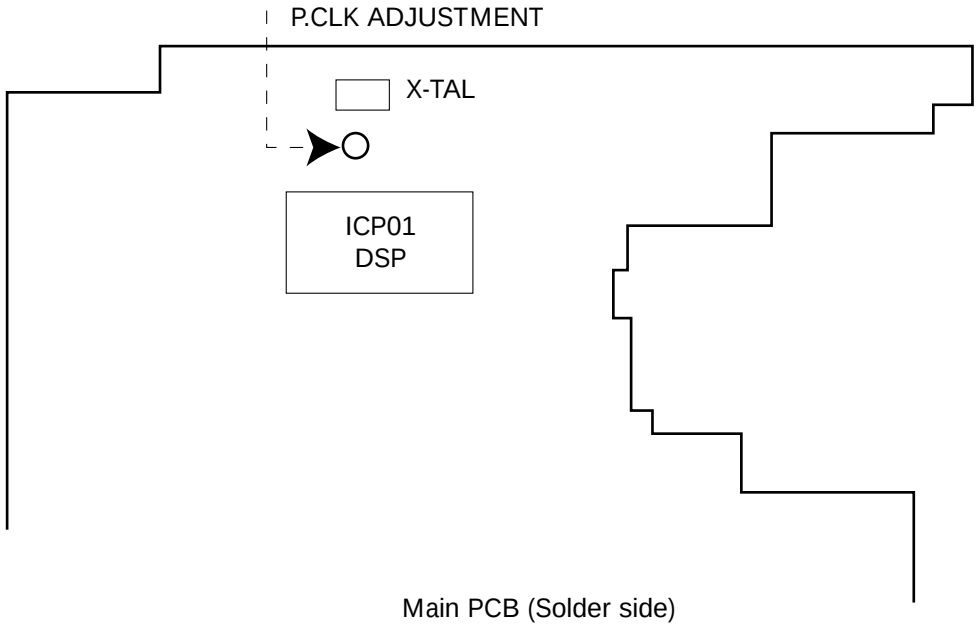
Notes : To maintain proper focus throughout the zoom range, the focus lens position must be changed as the zoom lens is moved.
During this adjustment the microprocessor will measure the focus positioning requirements at the wide and telephoto position of the zoom lens.

1) Camera "E-E".
2) Focus chart (Attached on the last page of this manual).
3) Aim the camera at the focus chart placed 3 meters away and perpendicular to the center of the lens.
   The chart should be placed on the flat, gray or white wall.
4) Connect monitor TV jack to video output jack.
5) Press the "DATE/TIME (MODE UP)" and "TITLE(MODE DOWN)" button, so that the OSD start is "0DE. 3M LEN XX XX".
6) Press "MENU/ENTER(CONFIRM)" button.
   The camera will move both zoom and focus lens. Be sure to do not tremble the lens.
   The adjustment is finished when the O.K! message appears on the TV screen.
   At the wide zoom position, the brightness of picture depends on data of Addr. 0C9, if the picture is dark, decrease the data of Addr. 0C9.



2. P. CLK Adjustment

1) “Camera”, no signal input.
2) P.CLK and AF MICOM.
3) Connect a frequency counter to P.CLK.
4) Press the “DATE/TIME (MODE UP)/TITLE(MODE DOWN)” button so that the OSD state is “005 XX XX”.
5) Adjust the “C/RESET(DATA UP)/Z/RTN(DATA DOWN)” button and MENU/ENTER(CONFIRM) button so that frequency is
   PAL : VP-A30, VP-A31, VP-A33 --> 9.453125MHz ± 50Hz.
   VP-A34, VP-A800, VP-A850 --> 14.18750MHz ± 50Hz.
   NTSC : SC-A30, SC-A33, SC-A35 --> 9.534964MHz ± 50Hz.
   SC-A850, SC-A85 --> 14.318182MHz ± 50Hz.



3. Zoom VR Center

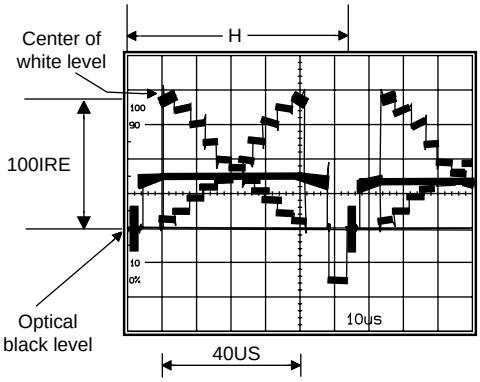
1) Camera “E-E”, 3100°K gray-scale chart.
2) Video(output) jack and EVR.
3) Connect monitor TV to video(output) jack.
4) Press the “DATE/TIME (MODE UP)/TITLE (MODE DOWN)” button so that the OSD state is “OD6. ZVR.C XX XX”.
5) Press “MENU/ENTER(CONFIRM)” button.
6) Then, the microprocessor will work ;
   - Find the Zoom VR Center position
   - Store the data to mode 0AA.

4. Auto hall

1) Camera “E-E”, 3100°K gray-scale chart.
2) Video(output) jack and EVR.
3) Connect monitor TV to video(output) jack.
4) Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button so that the OSD state is “OCD. HALL XX XX”.
5) Press “MENU/ENTER(CONFIRM)” button.
6) Then, the microprocessor will work ;
   - IRIS open, HALL maximum value found,
   - IRIS closed, HALL minimum value found,
   - Store the HALL REF/GAIN data to mode 00E and mode 00F.
   - Store the HALL min./max. data to mode 0BA and mode 0BB.

5. AUTO IRIS

1) Camera “E-E”, 3100°K gray-scale chart.
2) Video(output) jack and AF MICOM.
3) Connect video(output) jack to waveform monitor input jack and monitor TV jack respectively.
4) Press the “DATE/TIME(MODE UP)/ TITLE (MODE DOWN)” button so that the OSD state is “OCE. IRIS XX XX”.
5) Press “MENU/ENTER(CONFIRM)” Button.
6) Then, the micro process will work;
   - IRIS open, IRIS control MAXIMUM Value found.
   - IRIS close, IRIS control minimum Value found.
   - Store the MIN/MAX data to mode 0BE, 0BF and mode 0A3, 0A4.
7) The OSD shows “O.K”.

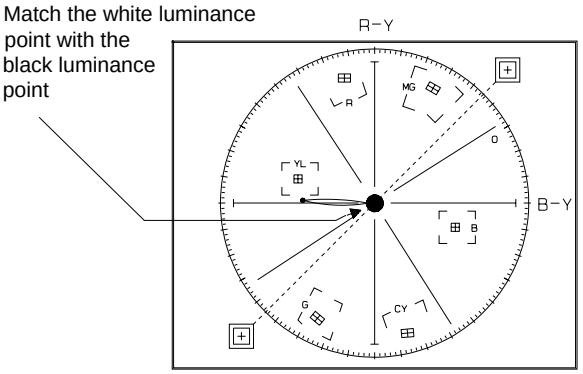


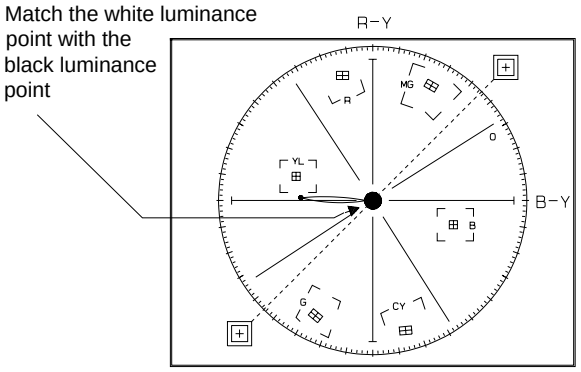
6. Auto white balance

1) Camera “E-E”, 3100°K/5100°K gray-scale chart.
2) Video(output) jack and AF MICOM.
4) Connect vectorscope input jack to video(output) jack.
3) Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button so that the OSD state is “OCF. AWB XX XX”.

a. W/B Indoor
a-1. Aim the camera at a 3100°K gray-scale chart illuminated at 1500 to 2000 lx. (40us)
a-2. Press “MENU/ENTER(CONFIRM)” button so that the white vector moves to the center on screen of the vectorscope.
a-3. During the control W/B indoor, OSD shows “0CF, AWB xx 00”.
The OSD shows “OK!”.

b. W/B Outdoor
b-1. Aim the camera at a 5100°K gray-scale (or, 3100°K+C16 filter) chart illuminated at 1500 to 2000 lx. (40us)
b-2. Press “MENU/ENTER(CONFIRM)” button so that the white vector moves to the center on screen of the vectorscope.
b-3. During the control W/B outdoor, OSD shows “0CF, AWB xx 01”.
The OSD shows “OK!”.
b-4. Store the data to mode 053, 054, 055 and 056.





7. Pre white balance (I)

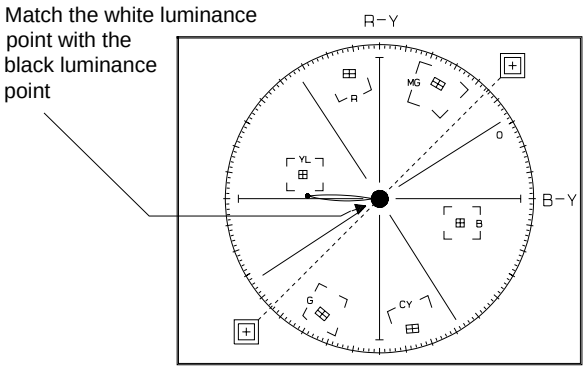
1) Camera “E-E”, 3100°K gray-scale chart.
2) Video(output) jack and AF MICOM.
3) Connect vectorscope input jack to video(output) jack.
4) Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button so that the OSD state is “137. XX XX.” (R-Y axial)
5) Aim the camera at a 3100°K gray-scale chart illuminated at 1500 to 2000 lx.
6) Adjust the “C/RESET(DATA UP)/Z/RTN (DATA DOWN)” button so that the white vector moves to the R-Y axial on screen of the vectorscope.

Note : Bright dot shifts after the confirm button is pressed.

8. Pre white balance (II)

1) Camera “E-E”, 3100°K gray-scale chart.
2) Video(output) jack and AF MICOM.
4) Connect vectorscope input jack to video(output) jack.
3) Press the “DATE/TIME (MODE UP)/TITLE (MODE DOWN)” button so that the OSD state is “138. XX XX”.
5) Aim the camera at a 3100°K gray-scale chart illuminated at 1500 to 2000 lx.
6) Adjust the “C/RESET(DATA UP)/Z/RTN (DATA DOWN)” button so that the white vector moves to the B-Y axial on screen of the vectorscope.

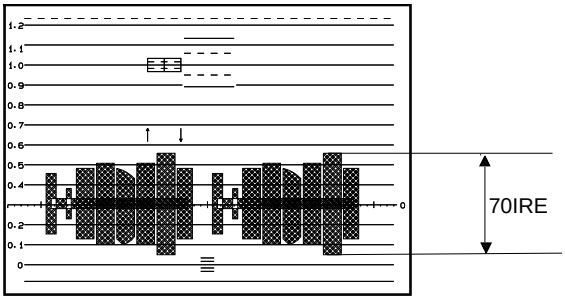
Note : Bright dot shifts after the confirm button is pressed.



9 R-Y Positive Gain

1) Camera “E-E”, 3100°K color bar chart.
2) Video(output) jack and register of EEPROM.
3) Connect video(output) jack to waveform monitor input jack and monitor TV jack respectively.
4) Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button so that the OSD state is “147. XX XX”.
5) Aim the camera at a color bar chart illuminated at 1500 to 2000 lx.
6) Adjust the “C/RESET(DATA UP)/Z/RTN (DATA DOWN)” button so that the red level is 70IRE.
7) Be sure to press the “MENU/ENTER(CONFIRM)” button to memorize setting.

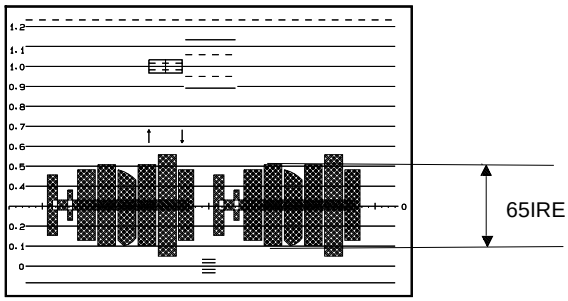
Note : Bright dot shifts after the confirm button is pressed.



10. R-Y Negative Gain

1) Camera “E-E”, 3100°K color bar chart.
2) Video(output) jack and register of EEPROM.
3) Connect video(output) jack to waveform monitor input jack and monitor TV jack respectively.
4) Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button so that the OSD state is “148. XX XX”.
5) Aim the camera at a color bar chart illuminated at 1500 to 2000 lx.
6) Adjust the “C/RESET(DATA UP)/Z/RTN (DATA DOWN)” button so that the cyan level is 65IRE.
7) Be sure to press the “MENU/ENTER/CONFIRM)” button to memorize setting.

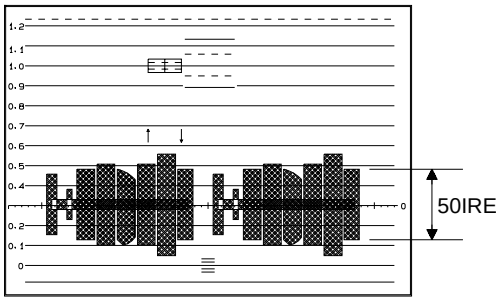
Note : Bright dot shifts after the confirm button is pressed.



11. B-Y Positive Gain

1) Camera “E-E”, 3100°K color bar chart.
2) Video(output) jack and register of EEPROM.
3) Connect video(output) jack to waveform monitor input jack and monitor TV jack respectively.
4) Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button so that the OSD state is “14B XX XX”.
5) Aim the camera at a color bar chart illuminated at 1500 to 2000 lx.
6) Adjust the “C/RESET(DATA UP)/Z/RTN (DATA DOWN)” button so that the blue level is 50IRE.
7) Be sure to press the “MENU/ENTER(CONFIRM)” button to memorize setting.

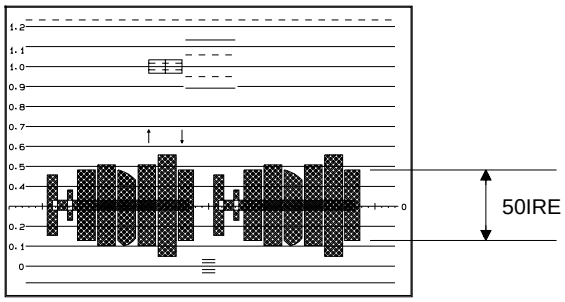
Note : Bright dot shifts after the confirm button is pressed.



12. B-Y Negative Gain

1) Camera “E-E”, 3100°K color bar chart.
2) Video(output) jack and register of EEPROM.
3) Connect video(output) jack to waveform monitor input jack and monitor TV jack respectively.
4) Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button so that the OSD state is “14C XX XX”.
5) Aim the camera at a color bar chart illuminated at 1500 to 2000 lx.
6) Adjust the “C/RESET(DATA UP)/Z/RTN (DATA DOWN)” button so that the yellow level is 50IRE.
7) Be sure to press the “MENU/ENTER(CONFIRM)” button to memorize setting.

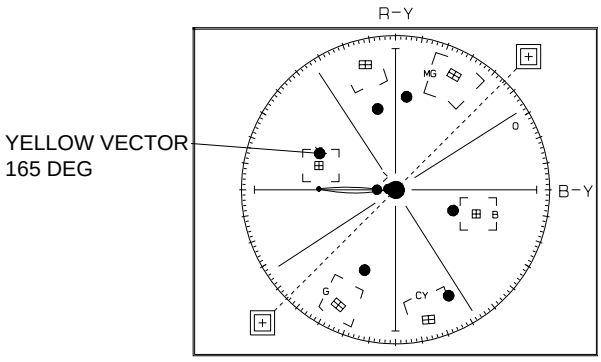
Note : Bright dot shifts after the confirm button is pressed.



13. R-Y Positive Hue

1) Camera “E-E”, 3100°K color bar chart.
2) Video(output) jack and register of EEPROM.
3) Connect video(output) jack to vectorscope input jack and monitor TV jack respectively.
4) Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button so that the OSD state is “149 XX XX”.
5) Aim the camera at a color bar chart illuminated at 1500 to 2000 lx.
6) Adjust the “C/RESET(DATA UP)/Z/RTN (DATA DOWN)” button so that the yellow vector is 165.
7) Be sure to press the “MENU/ENTER (CONFIRM)” button to memorize setting.

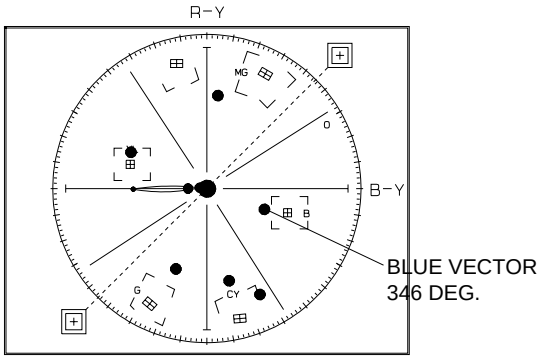
Note : Bright dot shifts after the confirm button is pressed.



14. R-Y Negative Hue

1) Camera “E-E”, 3100°K color bar chart.
2) Video(output) jack and register of EEPROM.
3) Connect video(output) jack to vectorscope input jack and monitor TV jack respectively.
4) Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button so that the OSD state is “14A XX XX”.
5) Aim the camera at a color bar chart illuminated at 1500 to 2000 lx.
6) Adjust the “C/RESET(DATA UP)/Z/RTN (DATA DOWN)” button so that the blue vector is 346.
7) Be sure to press the “MENU/ENTER (CONFIRM)” button to memorize setting.

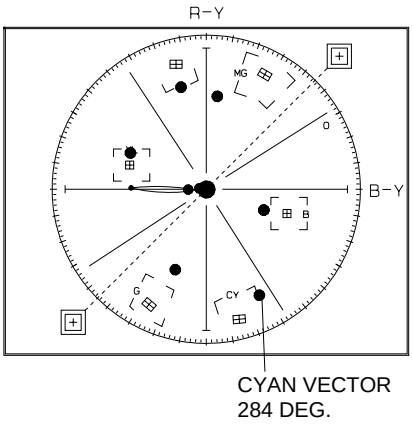
Note : Bright dot shifts after the confirm button is pressed.



15. B-Y Positive Hue

1) Camera “E-E”, 3100°K color bar chart.
2) Video(output) jack and register of EEPROM.
3) Connect video(output) jack to vectorscope input jack and monitor TV jack respectively.
4) Press the “DATE / TIME(MODE UP) / TITLE (MODE DOWN)” button so that the OSD state is “14D XX XX”.
5) Aim the camera at a color bar chart illuminated at 1500 to 2000 lx.
6) Adjust the “C / RESET(DATA UP) / Z / RTN (DATA DOWN)” button so that the cyan vector is 284.
7) Be sure to press the “MENU / ENTER (CONFIRM)” button to memorize setting.

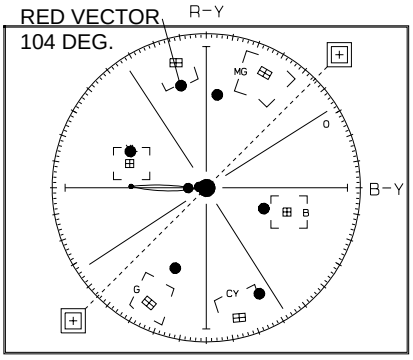
Note : Bright dot shifts after the confirm button is pressed.



16. B-Y Negative Hue

1) Camera “E-E”, 3100°K color bar chart.
2) Video(output) jack and register of EEPROM.
3) Connect video(output) jack to vectorscope input jack and monitor TV jack respectively.
4) Press the “DATE / TIME(MODE UP) / TITLE (MODE DOWN)” button so that the OSD state is “14E XX XX”.
5) Aim the camera at a color bar chart illuminated at 1500 to 2000 lx.
6) Adjust the “C / RESET(DATA UP) / Z / RTN (DATA DOWN)” button so that the red vector is 104.
7) Be sure to press the “MENU / ENTER(CONFIRM)” button to memorize setting.

Note : Bright dot shifts after the confirm button is pressed.



5-2-3 EVF Adjustment

Note : From this point forward, the structure of every adjustment is as follows.

Step	Adjustment Item
1. Mode and input signal/ alignment tape 2. Test point and ADJ. part 3. Result and Remarks	ADJ. point → Test point ⇢

1. AFC

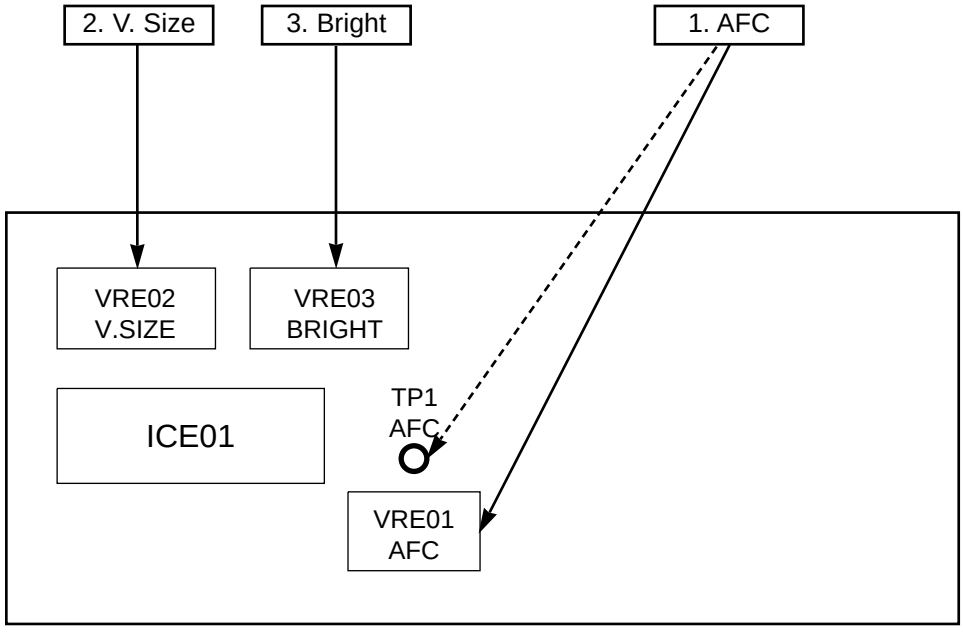
1) VCR “PB”, color bar tape.
2) TP•AFC and VRE01.
3) Connect digital voltmeter probe to TP•AFC.
4) Adjust VRE01 so that the voltage is DC 2.5V ±0.1V.

2. V. Size

1) CAMERA “AUTO”, Aim circle object.
2) Viewfinder and VRE02.
3) Adjust VRE02 so that the circle object in viewfinder is round perfectly.

3. Bright

1) CAMERA “AUTO”, Aim the gray scale chart.
2) Viewfinder and VRE03.
3) Adjust VRE03 so that all steps of the gray scale can be distinguished.



EVF PCB (Solder side)

5-2-4 CVF Adjustment

Notes :

1. After each adjustment step is completed, OSD shows “CONFIRM!”.
2. EEPROM(ICE02) stores confirmed adjustment value of each adjustment step.
3. After finishing the adjustment, reset the main power source (OFF-ON) to memorize the adjustment data in EEPROM.

5-2-4 (a) PREPARATION

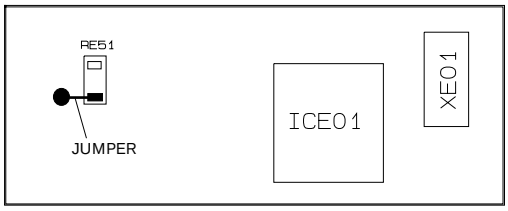
1. How to get into the CVF adjust mode.

STEP1

1. Remove RE51 (1.5 kohm) and place a jumper to ground land on the CVF PCB.
2. After adjustment is completed, replace RE51 to its original position. See the below figure for the location of RE51.

STEP2

1. Connect the power source (battery / DC cable).
2. Set the CAMERA / VCR switch of the camcorder to “VCR” position.
3. Set OSD on state.
4. Press and hold the “EJECT” button and “PLAY / STILL” button on the camcorder at the same time for more than 3 seconds. Then unit goes into service mode.



CVF PCB

OSD → CVF
8. PLL
EPR : XX EVR : XX

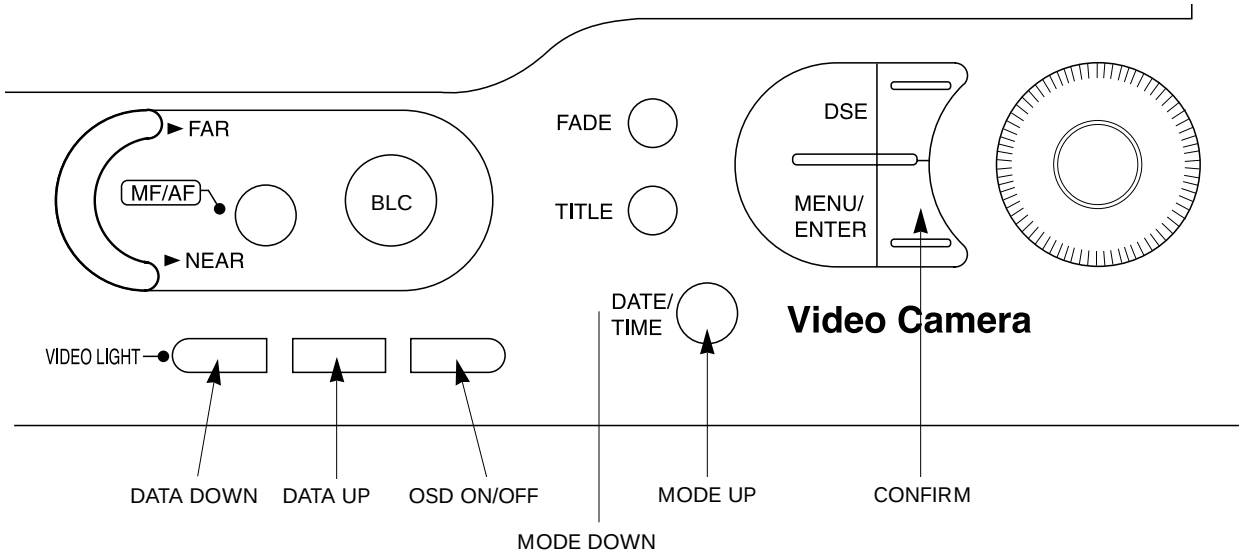
STEP3

Color bar pattern appears, and 0SD shows “8. PLL EPR XX. EVR XX”. Then CVF adjustment mode has been activated successfully.

Note : When “XX XX” is shown in service adjustment procedures, this indicates variable values.

2. The following chart shows the function of each button. In service adjustment mode, button names are different from those in customer camera function control mode. EX)MENU/ENTER button is the same as confirm.

Button	Function
DATE/TIME (MODE UP)	When change the adjustment mode.
TITLE (MODE DOWN)	When change the adjustment mode.
C/RESET (DATA UP) Z/RTN (DATA DOWN)	When change data value of adjust state.
MENU/ENTER (CONFIRM)	Data store after finishing adjustment by “DATA UP/DATA DOWN” button



ADDRESS	MODE	NTSC	PAL	MEAN	REMARK
0	TINT	88	65	TINT	ADJUST
1	COLOR	65	75	COLOR GAIN	ADJUST
2	BRIGHT	88	88	BRIGHT	ADJUST
3	CONTRAST	60	60	CONTRAST	FIXED
4	R SUB	8A	80	R-BRIGHT	ADJUST
5	B SUB	8A	80	B-BRIGHT	ADJUST
6	GAMMA 1	75	75	GAMMA1 GAIN	FIXED
7	GAMMA 2	B1	B1	GAMMA2 GAIN	FIXED
8	PLL	60	60	PLL	ADJUST
9	MODE 1	02	0E	SYSTEM SELECTION 1	FIXED
A	MODE 2	00	00	SYSTEM SELECTION 2	FIXED
B	MODE 3	F5	F5	H-POSITION	FIXED

NOTE : “XX XX: indicates variable values.

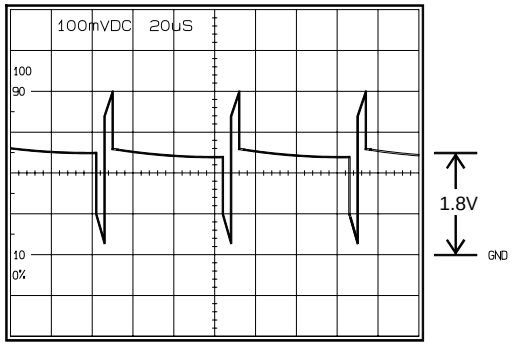
5-2-4 (b) ADJUSTMENT

Note :
1. From this point forward, the structure of every adjustment is as follows.
2. See page 5-26 for the location of test points and adjustments.

Step	Adjustment Item
1. Mode and input signal 2. Test point 3. Result and Remarks	ADJ. point → Test point ⇢

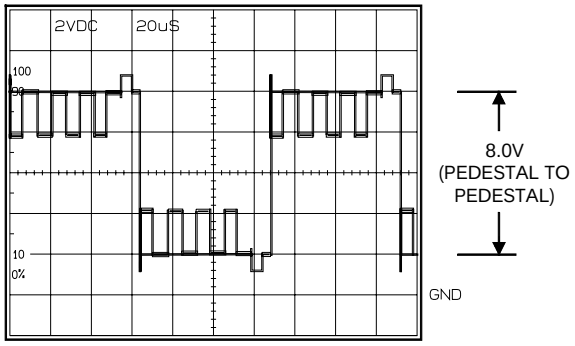
1. PLL

1) Color bar
2) Connect an oscilloscope probe to PLL
3) Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button so that the OSD state is “8 PLL EPR:XX EVR:XX”
4) Adjust the “C/RESET(DATA UP)/Z/RTN (DATA DOWN)” button so that RPD level is DC1.8+-0.1Vp-p.
5) Be sure to press the “MENU/ENTER(CONFIRM)” button to memorize setting.
6) The OSD shows “OK”



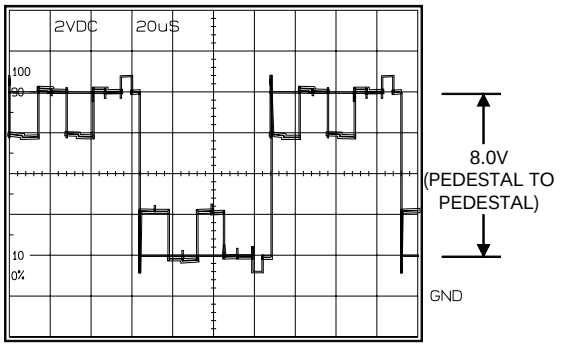
2. Brightness

1) Color bar.
2) G-OUT.
3) Connect an oscilloscope probe to G-OUT.
4) Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button so that the OSD state is “2 BRIGHT EPR:XX EVR:XX”
5) Adjust the “C/RESET(DATA UP)/Z/RTN (DATA DOWN)” button so that bright(Green) level is 8.0Vp-p (pedestal to pedestal).
6) Be sure to press the “MENU/ENTER(CONFIRM)” button to memorize setting.
7) The OSD shows “O.K”



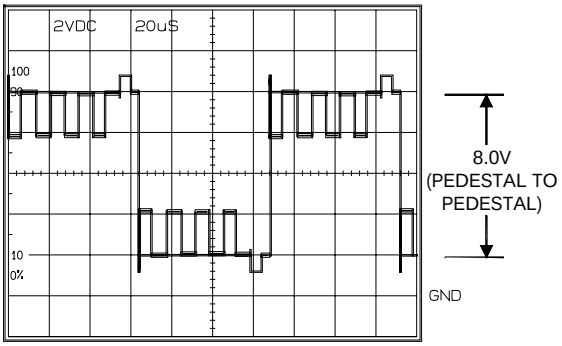
3. R-Sub Brightness

1) Color bar
2) R-OUT
3) Connect an oscilloscope probe to R-OUT.
4) Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button so that the OSD state is “4 R SUB EPR:XX EVR:XX”
5) Adjust the “C/RESET(DATA UP)/Z/RTN (DATA DOWN)” button so that R-OUT(Red) level is 8.0Vp-p (pedestal to pedestal).
6) Be sure to press the “MENU/ENTER(CONFIRM)” button to memorize setting.
7) The OSD shows “O.K”



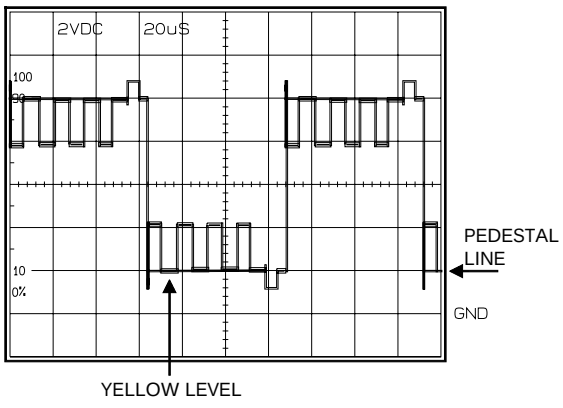
4. B-Sub Brightness

1) Color bar
2) B-OUT
3) Connect an oscilloscope probe to B-OUT.
4) Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button so that the OSD state is “5 B SUB EPR:XX EVR:XX”
5) Adjust the “C/RESET(DATA UP)/Z/RTN (DATA DOWN)” button so that B OUT(Blue) level is 8.0Vp-p (pedestal to pedestal).
6) Be sure to press the “MENU/ENTER(CONFIRM)” button to memorize setting.
7) The OSD shows “O.K”



5. Color

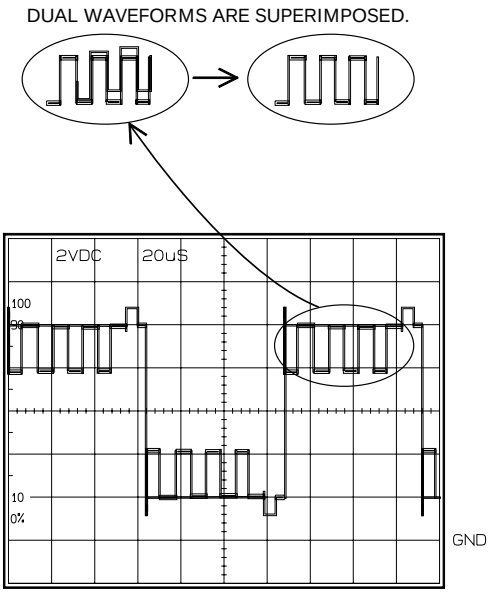
1) Color bar
2) B-OUT
3) Connect an oscilloscope probe to B-OUT.
4) Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button so that the OSD state is “01 COLOR EPR:XX EVR:XX”
5) Adjust the “C/RESET(DATA UP)/Z/RTN (DATA DOWN)” button so that the Yellow level is equal to the pedestal line.
6) Be sure to press the “MENU/ENTER(CONFIRM)” button to memorize setting.
7) The OSD shows “O.K”.



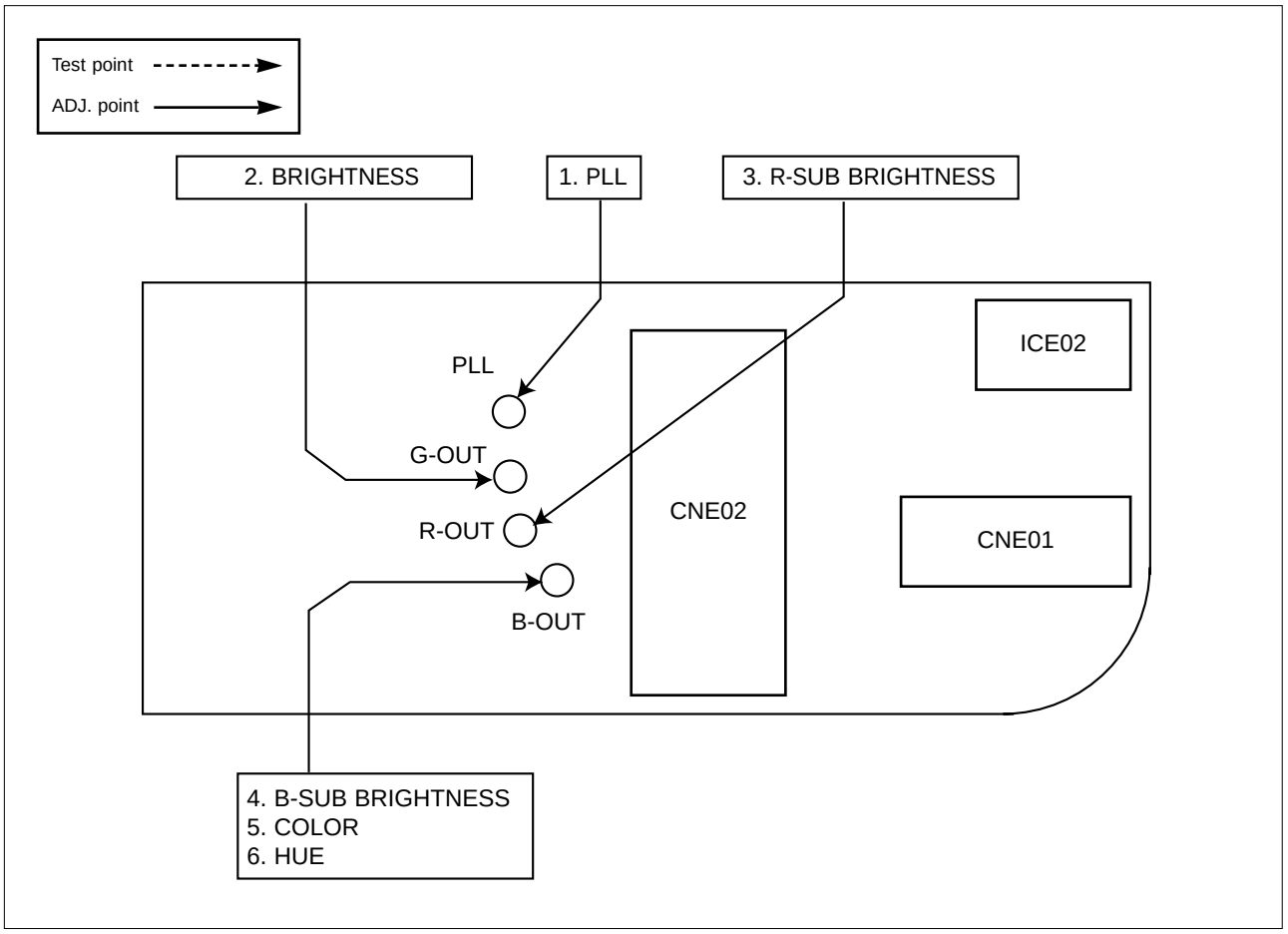
6. TINT

1) Color bar
2) B-OUT
3) Connect an oscilloscope probe to B-OUT.
4) Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button so that the OSD state is “0 TINT EPR:XX EVR:XX”
5) Adjust the “C/RESET(DATA UP)/Z/RTN (DATA DOWN)” button so that the dual waveforms are superimposed.
6) Be sure to press the “MENU/ENTER(CONFIRM)” button to memorize setting.
7) The OSD shows “O.K”

Note : If the data is largely changed, perform 5. Color Adjustment.



NO.	Address	Adjustment	Test point	Adjustment point	Spec.
1	8	PLL	PLL	EVR	1.8±0.1V DC
2	2	BRIGHTNESS	G-OUT	EVR	8.0Vp-p
3	4	R-SUB BRIGHTNESS	R-OUT	EVR	8.0Vp-p
4	5	R-SUB BRIGHTNESS	B-OUT	EVR	8.0Vp-p
5	1	COLOR	B-OUT	EVR	-
6	0	TINT	B-OUT	EVR	-



5-3 VCR Section Adjustment

5-3-1 Preparations

1. Equipment :

1) Monitor TV.
2) Dual trace oscilloscope of over 20MHz band, incorporates delay mode.
   (Use 10 : 1 probe unless otherwise specified.)
3) Frequency counter
4) DC power supply.
5) Alignment tape (Colour bar : SP)
6) 8mm Video Tape for record.

2. Composition of VCR P.C.Boards

1) Main PCB (system control/servo, video, audio, camera, DC/AC CONVERTER)
2) Rear PCB
3) Function PCB
4) Front PCB

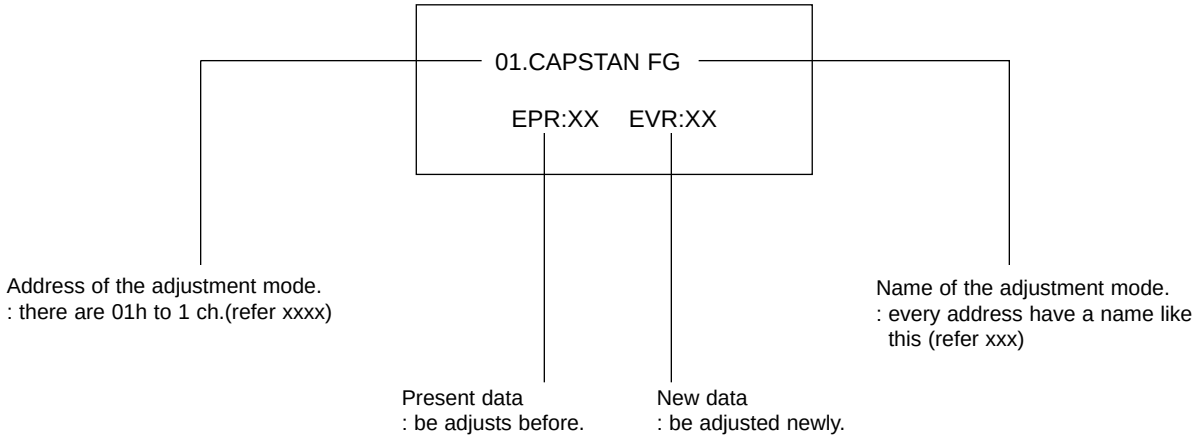
STEP 1

1. Connect the power source (battery/DC cable).
2. Set the power switch of the camcorder to PLAYER position.
3. Press the eject key to eject mode.

STEP 2

1. Press and hold “EJECT” button “STOP” button on the Camcorder at the same time for more than 5 seconds.
2. If the color bar generated internally appears on the monitor and adjustment mode displayed like the figure below, VCR adjustment mode has been successfully activated.
3. Insert tape into housing ass’y and then perform the adjustments.

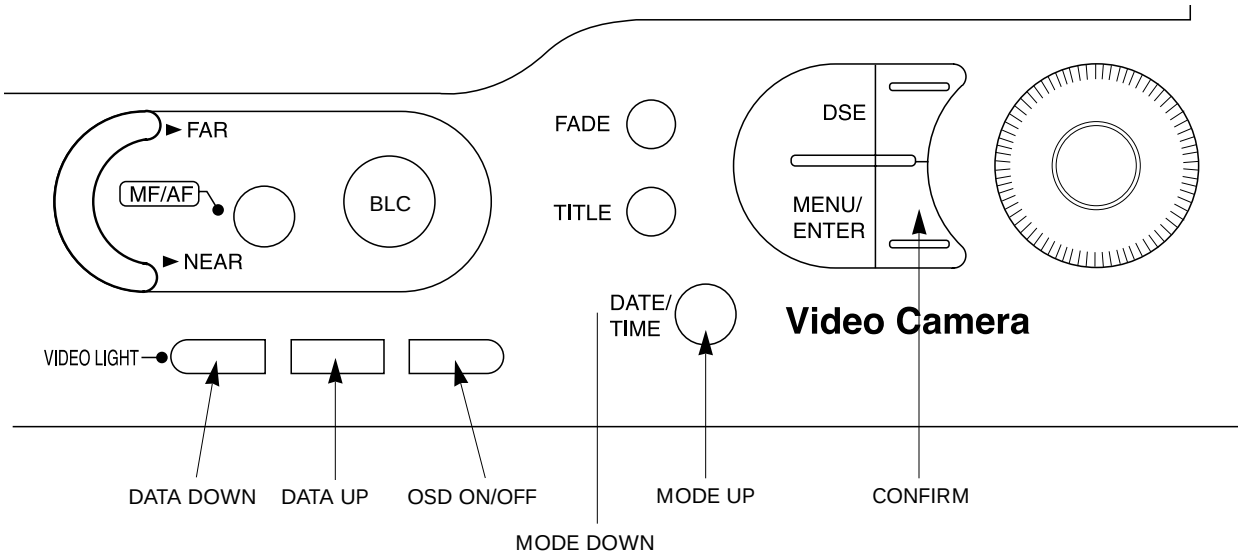
TV or EVF/CVF monitor


01.CAPSTAN FG
EPR:XX EVR:XX
Address of the adjustment mode.
: there are 01h to 1 ch.(refer xxxx)
Name of the adjustment mode.
: every address have a name like this (refer xxx)
Present data
: be adjusts before.
New data
: be adjusted newly.

3. How to get into service “**ADJUST**” mode.

4. The location of function button.

For Camcorder Adjustment



5. If you want to finish the adjustment mode, you have to do Battery Reset.
   The Battery Reset means that you pull out the power source and pull in it again.
   Then, the adjustment ended and the camcorder works normally.

5-3-2 VCR Section

Note 1 : From this point forward, the structure of every adjustment is as follows.

Step	Adjustment Item
1. Mode and input signal / alignment tape 2. Test point and ADJ. part 3. Result and Remarks	

ADJ. point

Test point

Note 2 : How to connect video out signal.

-Connect the video cable to ass'y A / V Jack.

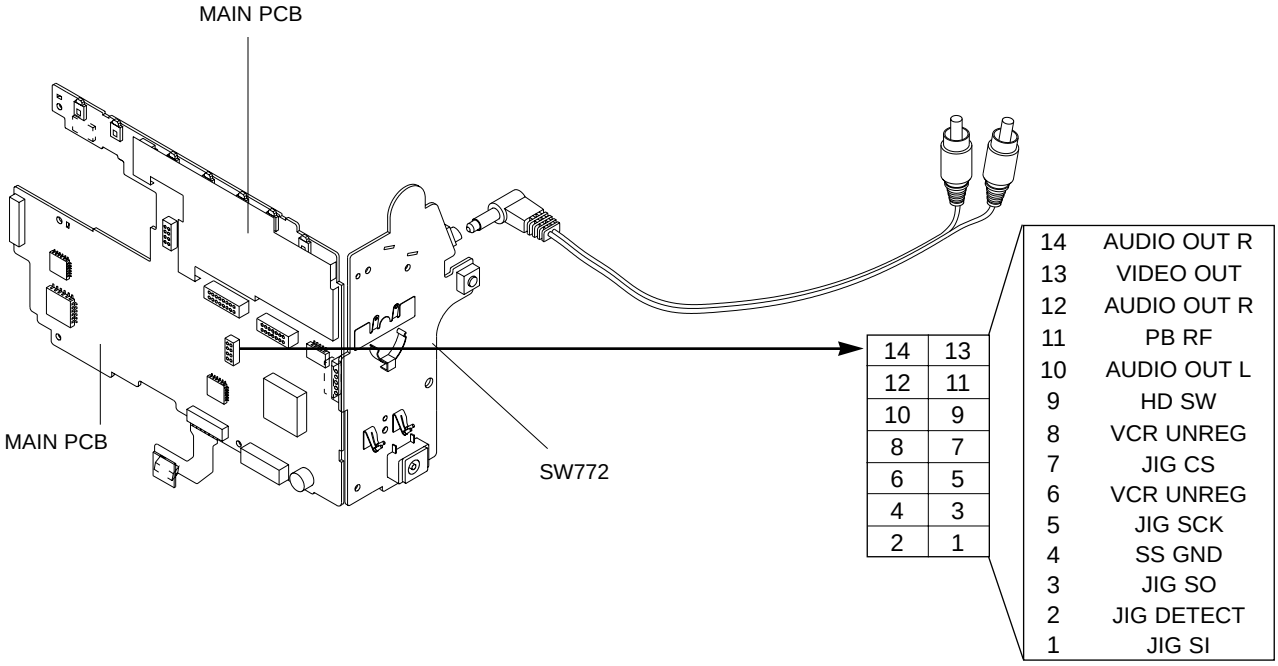


Fig. 1 Video Signal Connection

Note 3 : How to record -1. Insert a recordable tape.
-2. Press the SW772 (START / STOP)button on the Rear board in the adjustment mode.

5-3-3 Adjustment

1. Kinds of adjustment in recorder mode.

ADDRESS	NAME	NORMAL MODEL		HI 8 MODEL	
		NTSC	PAL	NTSC	PAL
01	CAPSTAN FG	80	80	80	80
02	Y-EMPHASIS IN (NOR)	Adjustment		Adjustment	
03	PB OUT-LEVEL (NOR)	Adjustment		Adjustment	
04	Y-FM CARRIER (NOR)	Adjustment		Adjustment	
05	Y-FM DEVIATE (NOR)	Adjustment		Adjustment	
06	C-EMPHASIS	CD	CD	A9	CD
07	BPF-ADJ	Adjustment		Adjustment	
08	AUDIO-1.5MHZ	70	70	70	70
09	AUDIO-1.7MHZ (ST)	80	80	80	80
0A	HD SW P	Adjustment		Adjustment	
0B	MTQ (PB)	D0	D0	D0	D0
0C	MTFQ (NOR)	7A	7A	7A	7A
0D	WHITE CLIP (NOR)	80	80	80	80
0E	REC C LEVEL	8C	99	BC	E0
0F	REC Y FM LEVEL	C8	B8	AC	C0
10	PB DEL ADJ	85	65	C/RESET	C/RESET
11	D CLIP (NOR)	65	65	65	65
12	DEL ADJ	85	65	C/RESET	C/RESET
13	SMEAR CONT	00	00	00	00
14	PB OUT LEVEL (HI8)	—		Adjustment	
15	Y-FM CARRIER (HI8)	—		Adjustment	
16	WHITE CLIP (HI8)	—		65	55
17	MTFQ (HI8)	—		9A	9A
18	D CLIP (HI8)	—		8E	8E
19	MODEL CODE	Model code setting		Model code setting	
1A	Y-EMPHASIS IN (HI8)			Adjustment	
1B	Y-FM DEVIATE (HI8)			Adjustment	
1C	COLOR BAR LEVEL	Adjustment		Adjustment	

2. Adjustment

* Please keep the order according to explanation.

2-1. Setting of the model name

a. Preparation

TAPE	NONE
EQUIPMENT	POWER SOURCE
OTHER	NONE
TEST POINT	NONE
ADDRESS	19
NAME	MODEL CODE

b. Connect a power source.
c. Get into the VCR adjustment mode.
d. Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button of CAMCORDER so as to select the address 19.
e. Press the “C/RESET(DATA UP)/Z/RTN(DATA DOWN)” so that OSD shows ”ERR:XX EVR: XX” “XX” is different dependent on the model as below.

MODEL NAME	ADDRESSED CODE	MODEL NAME	ADDRESSED CODE
VP-A30	30	SCA30	30
VP-A31	31	SCA31	30
VP-A33	33	SCA33	33
VP-A34	34	SCA35	35
VP-A800	80	SCA80	80
VP-A850	85	SCA85	85

f. Be sure to press the “MENU/ENTER(CONFIRM)” button of CAMCORDER to memorize setting.
g. Reset the power source so as to fix the new data to the camcorder’s EEPROM.

2-2. Head Switching Point

: This adjustment is performed after the replacement of deck mechanism.
• Without this adjustment, there will be a noise in playback picture.

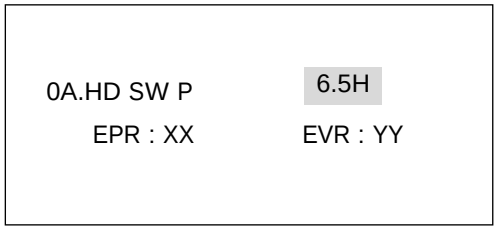
a. Preparations

TAPE	STANDARD COLOR BAR TAPE RECORDED WITH SP SPEED
EQUIPMENT	POWER SOURCE
OTHER	NONE
TEST POINT	NONE
ADDRESS	0A
NAME	HD SWP

b. Connect a power source.
c. Get into the VCR adjustment mode.
d. Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button of CAMCORDER so as to select the address 0A.
e. Insert the Standard Color Bar Tape and press the PLAY button.

Note : If there is no video out, when you pressed the PLAY button, you can not adjust the Head Switching Point.
It may be caused by maladjusted VIDEO block.
In this case, adjust the VIDEO block before the Head Switching Point.
VIDEO block adjustments are 2-3~2-11.

f. The data of Head Switch is set to 6.2H~6.7H automatically.



g. Be sure to press the “MENU/ENTER(CONFIRM)” button of CAMCORDER to memorize setting.
h. Reset the power source so as to fix the new data to the camcorder’s EEPROM.

2-3. Adjusting Color Bar Level

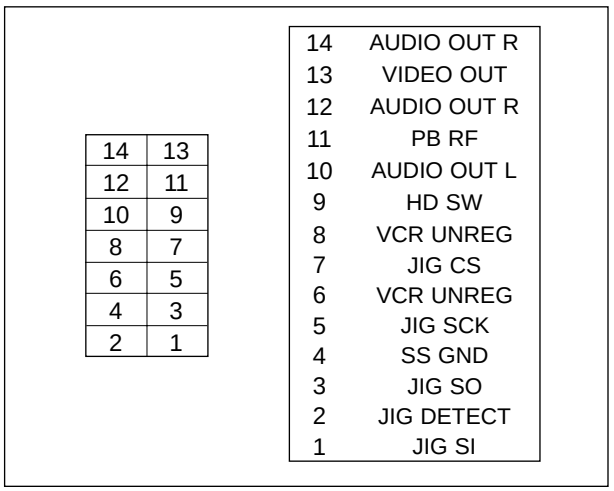
: This adjustment is performed to set the standard level of color bar signal which is generated internally.

a. Preparations

TAPE	NONE
EQUIPMENT	OSCILLOSCOPE
OTHER	NONE
TEST POINT	IC201 PIN 24
ADDRESS	1C
NAME	COLOR BAR LEVEL

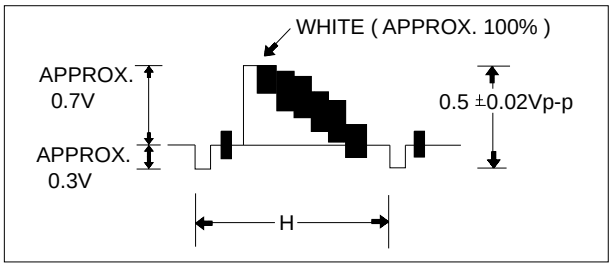
b. Connect a power source.
c. Get into the VCR adjustment mode.
d. Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button of CAMCORDER so as to select the address 1C.
e. Connect the oscilloscope to the addressed Test Point.
f. Press the “C/RESET(DATA UP)/Z/RTN(DATA DOWN)” button so as to set the P-P level of composite to 0.5V±0.02Vp-p.

Note : The level is changed after the confirmation.



14	13
12	11
10	9
8	7
6	5
4	3
2	1

14	AUDIO OUT R
13	VIDEO OUT
12	AUDIO OUT R
11	PB RF
10	AUDIO OUT L
9	HD SW
8	VCR UNREG
7	JIG CS
6	VCR UNREG
5	JIG SCK
4	SS GND
3	JIG SO
2	JIG DETECT
1	JIG SI



g. Be sure to press the “MENU/ENTER(CONFIRM)” button of CAMCORDER to memorize setting.
h. Reset the power source so as to fix the new data to the EEPROM.

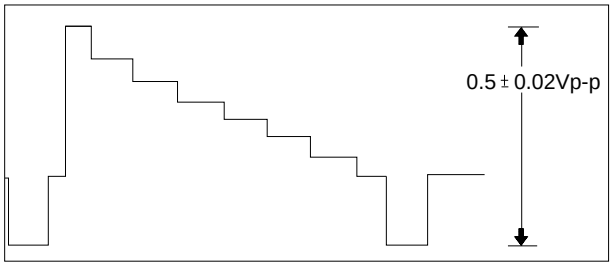
2-4. Adjusting Y-Emphasis Input

: This adjustment is performed to set the Y level which is recorded in tape.
Maladjusted Y level impact to the next adjustment.

a. Preparations

TAPE	8MM (NORMAL) TAPE
EQUIPMENT	OSCILLOSCOPE
OTHER	
TEST POINT	IC 201 PIN 13
ADDRESS	02
NAME	Y-EMPHASIS IN (NOR)

b. Connect a power source.
c. Get into the VCR adjustment mode.
d. Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button of CAMCORDER so as to select the address 02.
e. Insert a Normal Tape to the camcorder.
f. Connect the oscilloscope to the addressed Test Point.
g. Press the “C/RESET(DATA UP)/Z/RTN(DATA DOWN)” button so that the IC201 PIN13 is 0.5±0.02Vp-p from SYNC tip to peak level.



h. Be sure to press the “MENU/ENTER(CONFIRM)” button of CAMCORDER to memorize setting.
i. Reset the power source so as to fix the new data to the EEPROM.

2-5. Adjusting PB OUT LEVEL

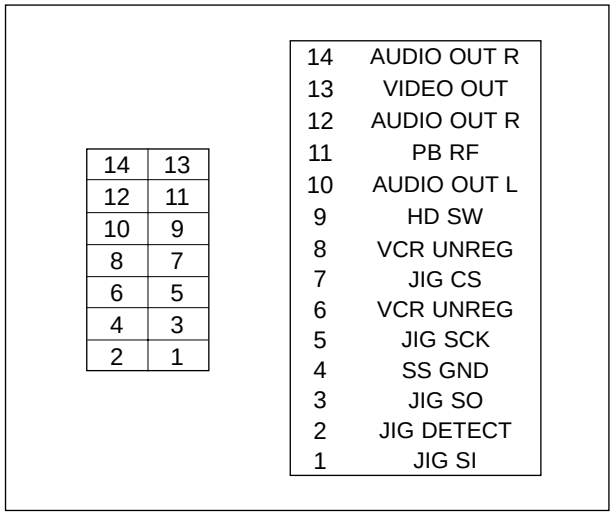
: This adjustment is perform to set the video out level to the regulated level.

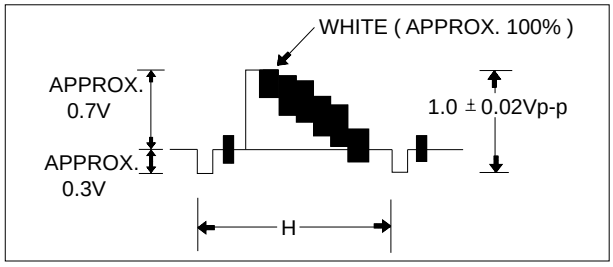
a. Preparations

TAPE	STANDARD COLOR BAR TAPE RECORDED WITH SP SPEED
EQUIPMENT	OSCILLOSCOPE
OTHER	CONNECT THE MONITOR (75Ω)
TEST POINT	CN605 PIN13
ADDRESS	03
NAME	PB OUT-LEVEL (NOR)

b. Connect a power source.
c. Get into the VCR adjustment mode.
d. Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button of CAMCORDER so as to select the address 03.
e. Insert the Standard Color Bar Tape and press the PLAY button.
f. Connect the oscilloscope to the addressed Test Point.

g. Press the “C / RESET(DATA UP) / Z / RTN(DATA DOWN)” button so that the CN605 PIN13 is 1.0±0.02Vp-p from SYNC to peak level.





h. Be sure to press the “MENU / ENTER(CONFIRM)” button of CAMCORDER to memorize setting.
i. Reset the power source so as to fix the new data to the camcorder’s EEPROM.

2-6. Y-FM Carrier (NOR)

: This adjustment is performed to set the sync-tip level of the composite video signal. Maladjusted Y-FM carrier impact to the playback picture, there may be black or white dot noise.

a. Preparations

TAPE	NORMAL TAPE FOR RECORDING
EQUIPMENT	OSCILLOSCOPE
OTHER	NONE
TEST POINT	IC201 PIN41
ADDRESS	04
NAME	Y-FM CARRIER (NOR)

b. Connect a power source.
c. Get into the VCR adjustment mode.
d. Press the “DATE / TIME(MODE UP) / TITLE (MODE DOWN)” button of CAMCORDER so as to select the address 04.
e. Insert a Normal Tape to the camcorder.
f. Press the START / STOP button on the Rear board so as to set the camcorder to RECORDING mode.
g. Connect the frequency counter to the addressed Test Point.
h. Press the “C / RESET(DATA UP) / Z / RTN(DATA DOWN)” button so as to set the frequency to 4.38MHz ± 0.02MHz
i. Be sure to press the “MENU / ENTER(CONFIRM)” button of CAMCORDER to memorize setting.
j. Reset the power source so as to fix the new data to the camcorder’s EEPROM.

2-7. Y-FM DEVIATION (NOR)

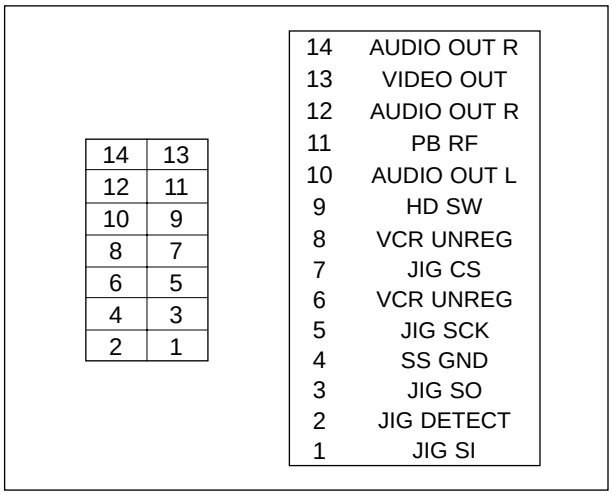
: This adjustment sets the Y-FM modulation level in recording. For adjustment, playback the self-recorded signal and observe the VIDEO OUT signal.

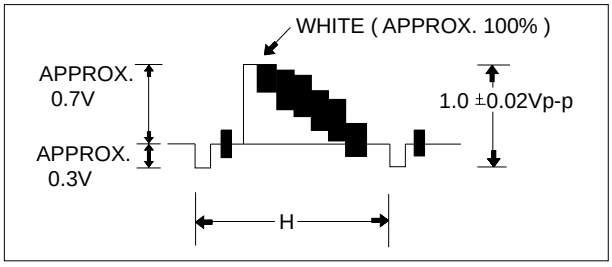
* Note : It is a little difficult to adjust because you can check the waveform in playback mode even though the adjustment is performed in VCR record mode.
So you have to do it carefully.

a. Preparations

TAPE	NORMAL TAPE FOR RECORDING
EQUIPMENT	OSCILLOSCOPE
OTHER	NONE
TEST POINT	CN605 PIN13
ADDRESS	05
NAME	Y-FM DEVIATE (NOR)

b. Connect a power source.
c. Get into the VCR adjustment mode.
d. Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button of CAMCORDER so as to select the address 05.
e. Insert a NORMAL Tape to the camcorder.
f. Press the START/STOP button on the Rear board so as to set the camcorder to RECORDING mode.
g. Record for enough time to check the waveform when you playback where you recorded in step f).
* 1 minute may be enough to check the waveform in playback mode.
h. Connect the oscilloscope to the addressed Test Point.
i. Make sure that the waveform is to be as below. If OK, go to step l).
j. In case of the waveform level is bigger than 1Vp-p, press the Data Down button so as to set to down the waveform level and if the waveform level smaller than 1Vp-p, press the Data Up button so as to set to up the waveform level.
k. Repeat step g), h), i).





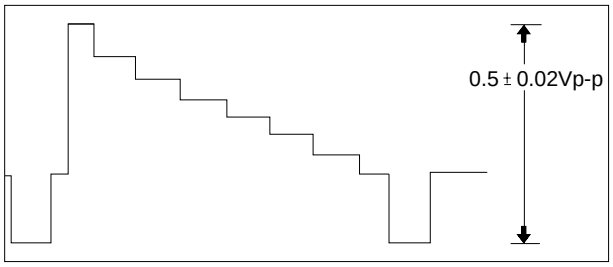
l. Be sure to press the “MENU/ENTER(CONFIRM)” button of CAMCORDER to memorize setting.
m. Reset the power source so as to fix the new data to the camcorder’s EEPROM.

2-8. Y-EMPHASIS INPUT (HI8)

a. Preparations

TAPE	HI8 TAPE
EQUIPMENT	OSCILLOSCOPE
OTHER	NONE
TEST POINT	IC201 PIN13
ADDRESS	1A
NAME	Y-EMPHASIS IN (HI8)

b. Connect a power source.
c. Get into the VCR adjustment mode.
d. Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button of CAMCORDER so as to select the address 1A.
e. Insert the Hi-8 tape to the camcorder.
f. Connect the oscilloscope to the addressed Test Point.
g. Press the “C/RESET(DATA UP)/Z/RTN(DATA DOWN)” button so that the IC201 PIN13 is 0.5±0.02Vp-p from SYNC tip to peak level.



h. Be sure to press the “MENU/ENTER(CONFIRM)” button of CAMCORDER to memorize setting.
i. Reset the power source so as to fix the new data to the camcorder’s EEPROM.

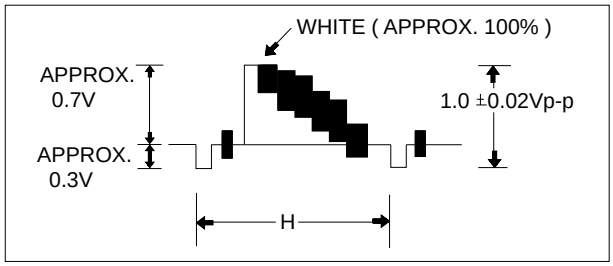
2-9. PB Output Level (Hi8)

: This adjustment is performed to set the sync-tip level of the composite video signal. Maladjusted Y-FM carrier impact to the play-back picture, there may be black or white dot noise.

a. Preparations

TAPE	HI8 STANDARD COLOR BAR TAPE RECORDED WITH SP SPEED
EQUIPMENT	OSCILLOSCOPE
OTHER	CONNECT THE MONITOR(75Ω)
TEST POINT	CN605 PIN13
ADDRESS	14
NAME	PB OUT-LEVEL (HI8)

b. Connect a power source.
c. Get into the VCR adjustment mode.
d. Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button of CAMCORDER so as to select the address 14.
e. Insert a Hi-8 standard color bar tape and press the PLAY button.
f. Connect the oscilloscope counter to the addressed Test Point.
g. Press the “C/RESET(DATA UP)/Z/RTN(DATA DOWN)” button so that the CN605 PIN13 is 1.0±0.02Vp-p from SYNC to peak level.



h. Be sure to press the “MENU/ENTER(CON-FIRM)” button of CAMCORDER to memorize setting.
i. Reset the power source so as to fix the new data to the camcorder’s EEPROM.

2-10. Y-FM Carrier (Hi8)

: This adjustment is performed to set the sync-tip level of the composite video signal. Maladjusted Y-FM carrier impact to the play-back picture, there may be black or white dot noise.

a. Preparations

TAPE	HI8 TAPE FOR RECORDING
EQUIPMENT	FREQUENCY COUNTER
OTHER	NONE
TEST POINT	IC 201 PIN 13
ADDRESS	15
NAME	Y-FM CARRIER (HI-8)

b. Connect a power source.
c. Get into the VCR adjustment mode.
d. Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button of CAMCORDER so as to select the address 15.
e. Insert a Hi-8 Tape to the camcorder.
f. Press the START/STOP button on the Rear board so as to set the camcorder to RECORD-ING mode.
g. Connect the frequency counter to the addressed Test Point.
h. Press the “C/RESET(DATA UP)/Z/RTN(DATA DOWN)” button so as to set the frequency to 5.99MHz ±0.02MHz
i. Be sure to press the “MENU/ENTER(CON-FIRM)” button of CAMCORDER to memorize setting.
j. Reset the power source so as to fix the new data to the camcorder’s EEPROM.

2-11. Y-FM Deviation (Hi8)

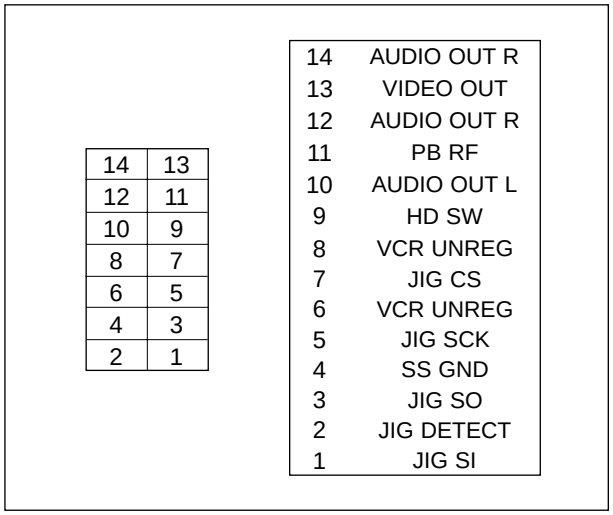
: This adjustment sets the Y_FM modulation level in recording. For adjustment, playback the self-recorded signal and observe the VIDEO OUT signal.

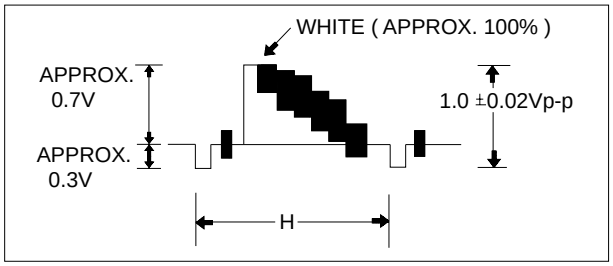
Note : It is a little difficult to adjust because you can check the waveform in playback mode even though the adjustment is performed in VCR record mode.
So you have to do it carefully.

a. Preparations

TAPE	HI-8 TAPE FOR RECORDING
EQUIPMENT	OSCILLOSCOPE
OTHER	NONE
TEST POINT	CN605 PIN13
ADDRESS	1B
NAME	Y-FM DEVIATE (HI8)

b. Connect a power source.
c. Get into the VCR adjustment mode.
d. Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button of CAMCORDER so as to select the address 1B.
e. Insert a Hi-8 Tape to the camcorder.
f. Press the START/STOP button on the Rear board so as to set the camcorder to RECORDING mode.
g. Record for enough time to check the waveform when you playback where you recorded in step f).
* 1 minute may be enough to check the waveform in playback mode.
i. Make sure that the waveform is to be as below. If OK, go to step l).
j. In case of the waveform level is bigger than 1Vp-p, press the Data Down button so as to set to down the waveform level and if the waveform level smaller than 1Vp-p, press the Data Up button so as to set to up the waveform level.
k. Repeat step g), h), i).





l. Be sure to press the “MENU/ENTER(CONFIRM)” button of CAMCORDER to memorize setting.
m. Reset the power source so as to fix the new data to the camcorder’s EEPROM.

2-12. BAND Pass Filter

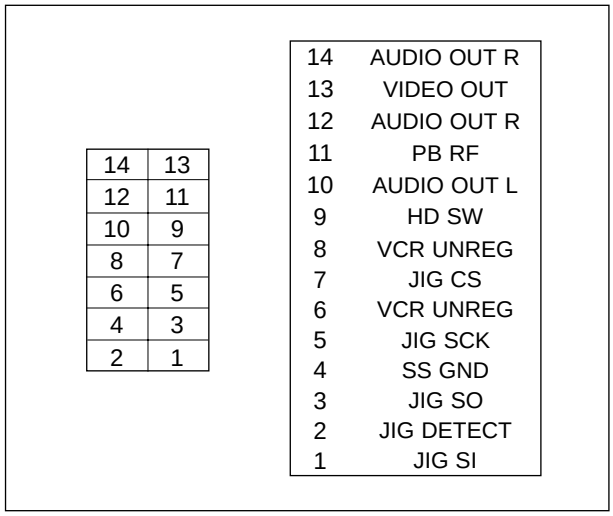
: This adjustment is performed to set the bandwidth of the 1.5MHz BPF.
By this adjustment, we can playback the audio without distortion.

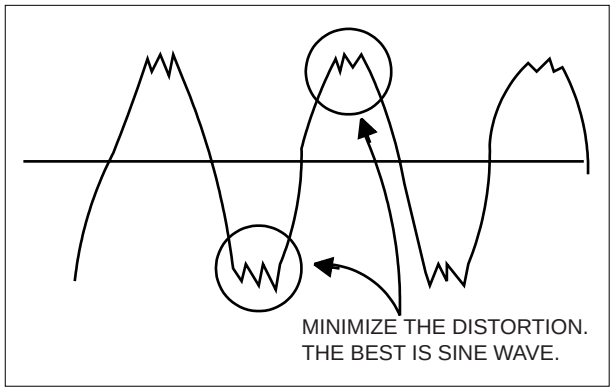
a. Preparations

TAPE	STANDARD COLOR BAR TAPE(MONAURAL)
EQUIPMENT	OSCILLOSCOPE
OTHER	NONE
TEST POINT	CN605 PIN 10
ADDRESS	07
NAME	BPF ADJ

b. Connect a power source.
c. Get into the VCR adjustment mode.
d. Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button of CAMCORDER so as to select the address 07.

e. Insert the Standard Color Bar Tape(monaural) and press the PLAY button.
f. Connect the oscilloscope to the addressed Test Point.
g. Press the "C/RESET(DATA UP)/Z/RTN(DATA DOWN)" button so as to set the waveform to be as below.





h. Be sure to press the "MENU/ENTER(CONFIRM)" button of CAMCORDER to memorize setting.
i. Reset the power source so as to fix the new data to the EEPROM.

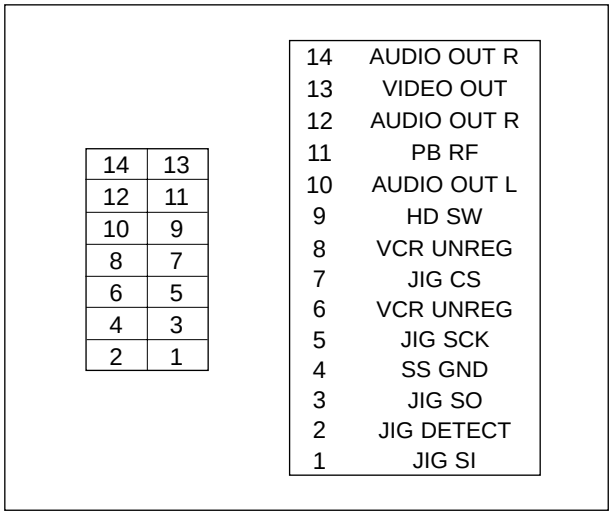
2-13. Audio 1.5MHz

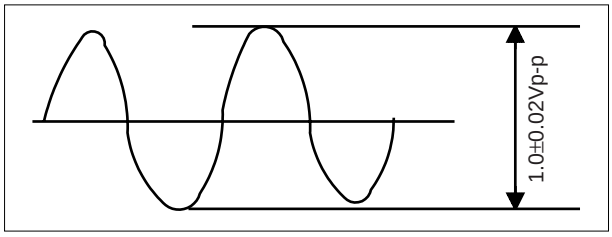
: This adjustment is performed to set the 1.5MHz deviation of the audio recording processor and the adjustment perform in playback mode.
If the audio output level is to be 1Vp-p, the deviation is to be a regulated deviation.

a. Preparations

TAPE	STANDARD COLOR BAR TAPE (MONAURAL)
EQUIPMENT	OSCILLOSCOPE
OTHER	NONE
TEST POINT	CN605 PIN 10
ADDRESS	08
NAME	AUDIO-1.5MHz

b. Connect a power source.
c. Get into the VCR adjustment mode.
d. Press the "DATE/TIME(MODE UP)/TITLE (MODE DOWN)" button of CAMCORDER so as to select the address 08.
e. Insert the Standard Color Bar Tape(monaural) and press the PLAY button.
f. Connect the oscilloscope to the addressed Test Point.
g. Press the "C/RESET(DATA UP)/Z/RTN(DATA DOWN)" button so as to set the waveform to be as below.





h. Be sure to press the "MENU/ENTER(CONFIRM)" button of CAMCORDER to memorize setting.
i. Reset the power source so as to fix the new data to the EEPROM.

2-14. Audio 1.7MHz (HI8)

: This adjustment is performed to set the 1.7MHz deviation of the audio recording processor and the adjustment perform in playback mode.
If the amplitude difference of two waves minimized, the deviation is to be a regulated deviation.

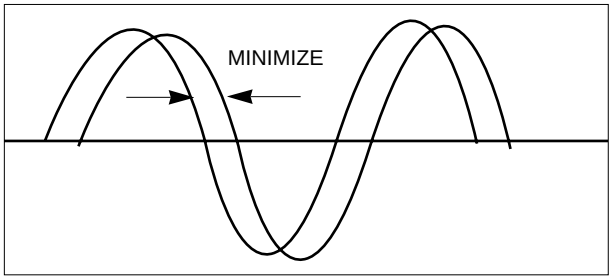
a. Preparations

TAPE	STANDARD COLOR BAR TAPE(STEREO)
EQUIPMENT	OSCILLOSCOPE
OTHER	NONE
TEST POINT	CN605 PIN 12
ADDRESS	09
NAME	AUDIO-1.7MHz
SPEC	THE AMPLITUDE DIFFERENCE BETWEEN TWO WAVES MINIMIZED.

b. Connect a power source.
c. Get into the VCR adjustment mode.
d. Press the “DATE/TIME(MODE UP)/TITLE (MODE DOWN)” button of CAMCORDER so as to select the address 09.
e. Insert the Standard Color Bar Tape(STEREO) and press the PLAY button.
f. Connect the oscilloscope to the addressed Test Point.
g. Press the “C/RESET(DATA UP)/Z/RTN(DATA DOWN)” button so as to set the waveform to be as below.

14	13
12	11
10	9
8	7
6	5
4	3
2	1

14	AUDIO OUT R
13	VIDEO OUT
12	AUDIO OUT R
11	PB RF
10	AUDIO OUT L
9	HD SW
8	VCR UNREG
7	JIG CS
6	VCR UNREG
5	JIG SCK
4	SS GND
3	JIG SO
2	JIG DETECT
1	JIG SI



h. Be sure to press the “MENU/ENTER(CONFIRM)” button of CAMCORDER to memorize setting.
i. Reset the power source so as to fix the new data to the EEPROM.